



VIA HAND DELIVERY

August 12, 2013

Education Bureau of Case Assignment & Initial Notice
Site Remediation Program
Energy NJ Department of Environmental Protection
401-05H
Federal PO Box 420
Trenton, NJ 08625-0420

Healthcare Re: Former Koppers Seaboard Site
* One Fish House Road, Kearny, New Jersey
Hospitality Program Interest Number G000001985

Infrastructure Enclosed are a Biennial Certification-Ground Water and revised Classification Exception Areas
Real Estate for the former Koppers Seaboard Site, located at One Fish House Road, Kearny, New Jersey.
Science & Technology The CEA / WRA was revised based upon discussion with R. Soboleski of the NJDEP regarding
the impact of a subsurface barrier placed as part of the remediation for an adjacent site. One hard
copy and one electronic copy on CD are enclosed. Original signed copies of the NJDEP Biennial
Certification-Ground Water Form and CEA Fact Sheets, along with a fee check #44615 in the
amount of \$375.00, for the Biennial Certification are also enclosed.

If there are any questions regarding this matter, please call me at (732) 584-0286 or contact me
by e-mail at jbolan@psands.com.

Very truly yours,

PAULUS, SOKOLOWSKI AND SARTOR, LLC

John T. Bolan, PE, LSRP
Senior Associate

Enclosures

Cc: Patricia Carpenter, Clerk, Town of Kearny (w/CDs)
John P. Sarnas, Health Officer, Town of Kearny (w/CDs)
Carrie Nawrocki, Executive Director, Hudson Regional Health Commission (w/CDs)
Peter Sawchuck, Key Environmental (w/CDs)
Michael Slenska, Beazer East (w/CDs)
Norman Guerra, HCIA (w/CDs)

67A Mountain Blvd Ext
PO Box 4039
Warren, NJ 07059

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www.psands.com



New Jersey Department of Environmental Protection
Site Remediation Program

REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER

Date Stamp
(For Department use only)

SECTION A. SITE NAME, LOCATION, AND INFORMATION

Site Name: Former Koppers Seaboard Site

List all AKAs: Koppers Company Inc. Seaboard Plant; Beazer East, Inc. Seaboard Site; Beazer East, Inc.

Street Address: One Fish House Road

Municipality: Kearny Township Borough or City)

County: Hudson Zip Code: 07032

Program Interest (PI) Number(s): G000001985 Case Tracking Number(s): NJD00244512

Date of Each Final Remediation Document: RAWPA September 2007; RAR 2003; RAR 2011 See Note A on page 6

Date CEA Was Established: 8/12/2011

Duration in Years of CEA: 999 Areal Extent in Acres of CEA: approx. 131 acres

1. Did the Municipal Block(s) and Lot(s) change since you established the CEA or your last submittal of the biennial certification and report? ☐ Yes ☒ No

If "Yes," list the new Municipal Block(s) and Lot(s) below:

Block #	Lot #	Block #	Lot #
Block #	Lot #	Block #	Lot #
Block #	Lot #	Block #	Lot #
Block #	Lot #	Block #	Lot #

2. Is this form being submitted pursuant to a remedial action permit? ☐ Yes ☒ No

3. Is the Person Responsible for Monitoring the Protectiveness of the Remedial Action required to obtain a remedial action permit at this time? See Note A-3 on Page 6 ☐ Yes ☒ No

4. Did you provide hard copies of this form to the municipal and county clerks for each municipality and county in which the site is located; the local, county and regional health department for each municipality and county in which the site is located; each current owner of the site; each current operator of the site; each current property owner within the footprint of the CEA and the Pinelands Commission, as applicable, consistent with N.J.A.C. 7:26E-8.3(b)5; and the Highlands Commission as applicable? ☒ Yes ☐ No

5. Did you provide to NJDEP copies of this form in paper and PDF? ☒ Yes ☐ No

SECTION B. FEES

- ☒ Biennial Certification Non Permit \$375.00
☐ Biennial Certification for Remedial Action Permit

Fee Billing Contact:

Business Name: Beazer East, Inc. c/o Three Rivers Management, Inc.

First Name of Contact: Michael Last Name of Contact: Slenska

Title: Senior Environmental Manager

Phone Number: (412) 208-8867 Ext: _____ Fax: _____

Mailing Address: 1910 Cochran Road, Manor Oak One - Suite 200

City/Town: Pittsburgh State: PA Zip Code: 15220

Email Address: mike.slenska@trmi.biz

SECTION C. CURRENT OWNER OF THE SITEChanged Since Last Submittal ☐

- ☐ If same as Person Responsible for Monitoring the Protectiveness of the Remedial Action (Section O), check box and go to Section D.

Full Legal Name of the Owner: Hudson County Improvement AuthorityFirst Name of Contact: NormanLast Name of Contact: GuerraTitle: Chief Executive OfficerPhone Number: (201) 795-4555

Ext: _____

Fax: (201) 795-0240Mailing Address: 574 Summit Avenue, 5th FloorCity/Town: Jersey CityState: NJZip Code: 07306Email Address: norman@hcia.org**SECTION D. CURRENT OPERATOR OF THE SITE**

- ☒ If same as Person Responsible for Monitoring the Protectiveness of the Remedial Action (Section O), check box and go to Section E.

Full Legal Name of the Operator: _____

First Name of Contact: _____

Last Name of Contact: _____

Title: _____

Phone Number: _____

Ext: _____

Fax: _____

Mailing Address: _____

City/Town: _____

State: _____

Zip Code: _____

Email Address: _____

SECTION E. CURRENT LESSEE OF THE SITE

- ☐ If same as Person Responsible for Monitoring the Protectiveness of the Remedial Action (Section O), check box and go to Section F.

Full Legal Name of the Lessee: Great Lakes Dredge and Dock Co. See Note E-1 on page 6First Name of Contact: StevenLast Name of Contact: O'HaraTitle: Vice PresidentPhone Number: (630) 574-3001

Ext: _____

Fax: _____

Mailing Address: 2122 York RoadCity/Town: Oak BrookState: ILZip Code: 60523Email Address: SFOhara@gldd.com**SECTION F. IEC CONDITIONS**

Since the establishment of the CEA or the last submittal of the biennial certification and report, did you discover any new Immediate Environmental Concern conditions? ☐ Yes ☒ No

If "No," go to G.

If "Yes," provide date IEC Contaminant Source Control Report was filed: _____

Indicate type(s) of IEC Conditions newly discovered: _____

SECTION G. STATUTORY AND REGULATORY CHANGES

1. Have you evaluated the Ground Water Quality Standards and other SRP regulations and guidance relevant to the CEA and any resulting vapor intrusion risk, that have been modified subsequent to the establishment of the CEA or the last submittal of the biennial certification and report? ☒ Yes ☐ No
2. After the evaluation in 1, was the remedial action still protective of public health, safety and of the environment? ☒ Yes ☐ No

If "No," complete Section N.

SECTION H. REMEDIAL ACTION (check all that apply)**Remedial action – Ground Water:**

- ☐ Potable Water Treatment – IEC
☐ Multiple Phase Extraction System
☐ SVE/Air Sparging
☐ Ozone Sparging
☒ Treatment – Type Funnel and Gate GAC
☒ Containment
☐ Hydraulic Control
☒ Monitored Natural Attenuation
☐ Chemical Oxidation
☒ Other (specify) DNAPL Recovery

Remedial action – Vapor Intrusion:

- ☒ No remedial action required
☐ Sealed Vapor Barrier
☐ Soil Vapor Extraction System
☐ Subsurface Depressurization System
☐ Sealing of Openings and Cracks
☐ Monitoring and/or Maintenance Requirements
☐ Other (specify) _____
☐ Immediate Environmental Concern

The site is in the: ☐ Pinelands ☐ Highlands

SECTION I. PROPERTY USE (check all that apply)**Site Use at Time CEA Was Established**

- ☒ Industrial ☐ Agricultural
☐ Residential ☐ Park or recreational use
☐ Commercial ☒ Vacant
☐ School or child care ☐ Government
☐ Landfill ☐ Other _____

Current Site Use

- ☒ Industrial ☐ Agricultural
☐ Residential ☐ Park or recreational use
☐ Commercial ☒ Vacant
☐ School or child care ☐ Government
☐ Landfill ☐ Other _____

Intended Future Site Use, if known

- ☒ Industrial ☐ Park or recreational use
☐ Residential ☐ Vacant
☒ Commercial ☐ Government
☐ School or child care ☐ Future site use unknown
☐ Agricultural ☐ Other _____

1. Describe the current site operations:

Site is currently being remediated in accordance with the ARRCs Rule (7:26C) and the Technical Regulations (7:26E) pursuant to an Administrative Consent Order (ACO). The majority of a NJDEP approved Remedial Action Work Plan has been completed.

A dredge processing and unloading operation exists at the site. This operation is located on the eastern most 20 acres of the property. The operation utilizes a bulkhead for receipt and unloading of dredged sediment which is then processed by mixing with cement. The processed sediment is transported off-site by truck or barge.

Groundwater monitoring is being performed on a periodic basis. IRM operations, monitoring and maintenance activities are conducted in applicable areas of the site on a periodic basis.

2. Has the site use changed from that at the time the CEA was established or the last submittal of the biennial certification and report? ☐ Yes ☒ No

If "Yes," go to 3. If "No," go to Section J.

3. Did the new site use require additional remediation? ☐ Yes ☒ No

If "Yes," complete Section N.

SECTION J. CURRENT OR PLANNED WATER USE WITHIN THE WELL SEARCH AREA (check all that apply)**Water Use Within the CEA When CEA Was Established**

- ☐ Potable
☐ Well Head Protection Area
 ☐ Tier 1 ☐ Tier 2 ☐ Tier 3
☐ Irrigation
☐ Industrial
☐ Geothermal

Current Water Use Within the CEA Boundaries

- ☐ Potable
☐ Well Head Protection Area
 ☐ Tier 1 ☐ Tier 2 ☐ Tier 3
☐ Irrigation
☐ Industrial
☐ Geothermal

1. Are the results of the well search attached to this form? ...Exhibit G provides the results of the well search... ☒ Yes ☐ No
2. Has water use changed within the well search area from that at the time the CEA was established or since the last submittal of the biennial certification and report? ☐ Yes ☒ No
If "Yes," complete item 3 in Section N.
3. Have any changes in water use changed the areal extent and or the duration of the CEA? ☐ Yes ☒ No
4. Have any of the following wells been installed within one mile up-gradient, side-gradient, and down-gradient of the CEA, since the last submission of the biennial certification and report? (check all that apply)
☐ Potable ☐ Industrial ☐ Irrigation
☐ Geothermal ☐ Production
5. Since the CEA was established or the last submittal of the biennial certification and report whichever is more recent, are there any planned changes in water use for the aquifers in which the CEA is located? ☐ Yes ☒ No
 Check all the sources that were evaluated to determine planned changes in water use:
☒ Municipal Master Plans
☒ Zoning Plans
☒ Local water purveyor plans and planning data pertaining to the existence of water lines and proposed future installation of water lines, wells or well fields
☒ Local and County ordinances restricting installation of potable wells
☒ Local and County boards of health
☒ Local planning officials
6. Did or could the actual or planned changes reported in items 1-5 above render the remedial action that includes the CEA not protective of public health, safety and of the environment? ☐ Yes ☒ No
 If "Yes," complete Section N.

SECTION K. VAPOR INTRUSION

If volatile contaminants are not included in the CEA check not applicable (NA) here and go to Section L ☐ NA

Change in the Ground Water Contaminant Fate and Transport

1. Was it necessary to re-evaluate the fate and transport of the ground water contaminant plume or the contaminants in the CEA with regard to vapor intrusion? ☒ Yes ☐ No
2. Based on the most recent data available, do any of the contaminants in the CEA exceed the current ground water screening levels in the NJDEP Vapor Intrusion Guidance? ☒ Yes ☐ No

Change in Property Use

Were there any changes in property use that increased the risk of vapor intrusion? ☐ Yes ☐ No

Vapor Intrusion Investigation

1. Did you investigate the vapor intrusion pathway pursuant to the NJDEP Vapor Intrusion Guidance? ☒ Yes ☐ No
 If "Yes," go to 2 and complete Section N. If "No," provide a written explanation for not evaluating the vapor intrusion pathway and go to Section L. See Exhibit B, Vapor Intrusion Documentation.
2. If the vapor intrusion pathway investigation in 1 indicates IEC conditions exist, provide the date of IEC Contaminant Source Control Report in Section F, above. If Vapor Concern conditions exist provide the date of the Vapor Concern Mitigation Response Action Report _____ and complete 3.
3. Was public notification conducted to notify all applicable parties listed at N.J.A.C. 7:26E-8.3(b)5 of the increased vapor intrusion risk? ☐ Yes ☐ No

SECTION L. LAND USE DISTURBANCES

1. Have disturbances of the land such as installation of a detention basin taken place? See Note L-1 on Page 6. ☒ Yes ☐ No
If "Yes," complete this entire section. If "No," go to Section M.
2. Did these disturbances intercept the water table within the CEA area in such a way that ground water sampling was needed to determine if the ground water contaminant plume could discharge to surface water? ☐ Yes ☒ No
If "Yes," go to 3. If "No," go to Section M.
3. Does the ground water meet the more stringent of either the New Jersey Surface Water Quality Criteria, N.J.A.C. 7:9B or the Federal Surface Water Quality Criteria, CFR Part 131? ☐ Yes ☒ No
4. Did these disturbances result in a contaminated discharge to surface water that rendered the remedial action not protective of public health, safety and of the environment? ☐ Yes ☒ No
If "Yes," complete Section N.

SECTION M. CEA STATUS

1. Was the CEA originally established for a ground water natural attenuation remedial action? See Note M-1 on Page 6. ☒ Yes ☐ No
2. Has the expiration date of the CEA passed? ☐ Yes ☒ No
- If "Yes," and 180 days have passed, attach the results of sampling conducted pursuant to N.J.A.C. 7:26E-8.6(b)7i.
 - If "No" but sampling was conducted pursuant to the remedial action work plan (RAW) or N.J.A.C. 7:26E-8.6(b)7iii, attach the results of the sampling. If applicable based on instructions, complete item 3 in Section N.
3. The results of ground water sampling conducted pursuant to N.J.A.C. 7:26E-8.6(b)7i or 8.6(b)7iii show that:
- ☐ Contaminant concentrations decreased to or below the applicable ground water quality standard throughout the entire area of the CEA; or
- ☒ Contaminant concentrations **did not** decrease to or below the applicable ground water quality standard throughout the entire area of the CEA.
4. If contaminant concentrations decreased to or below the applicable ground water quality standard throughout the entire area of the CEA:
- ☐ If you have a remedial action permit, submit the Termination of Permit Form with this form and check this box; or
- ☐ If you do not have a remedial action permit, submit a request to terminate the CEA with this form and check this box.
5. If sampling was conducted pursuant to N.J.A.C. 7:26E-8.6(b)7i and contaminant concentrations have **not** decreased to or below the applicable ground water quality standards throughout the entire area of the CEA, complete Section N.
6. Have monitoring wells associated with the CEA been damaged, vandalized, repaired, replaced, or decommissioned pursuant to N.J.S.A. 58:4A and N.J.A.C. 7:9D? ☒ Yes ☐ No
If "Yes," attach a description of what occurred and, if applicable, a copy of the Well Abandonment Report as specified at N.J.A.C. 7:26E-8.6(c)6 for each well that has been damaged, vandalized, repaired, replaced, or decommissioned. If wells have been replaced or additional wells installed complete item 3 in Section N.
7. Should the CEA be revised for any reason that did not require conducting additional remediation? ☒ Yes ☐ No
See Note M-7 on Page 6.
If yes, attach a revised CEA/WRA Fact Sheet form with any applicable or relevant Exhibits and indicate which major CEA component(s) should be revised: ☒ Contaminant List ☒ Boundaries ☐ Projected Term of CEA

SECTION N. ADDITIONAL REMEDIATION AND REQUIRED SUBMITTALS

1. If additional remediation was required list the Section letter corresponding to the work done, F, G, I, J, K and/or L _____, _____, _____, _____, _____ and:
- Provide the name(s) and date(s) of reports submitted to the Department that document the work done excluding the IEC and vapor intrusion related reports indicated in Sections F and K
IRAR- Standard Chlorine, Key Environmental, Inc. - December 2011 _____
- _____ and attach the applicable items listed below;

2. If ground water sampling pursuant to N.J.A.C. 7:26E-8.6(b)7i shows that contaminant concentrations have **not** decreased to or below the applicable ground water quality standards (see Section M) follow the instructions,
- ☐ Check here and attach the revised CEA application:
- If you have a GW remedial action permit, submit with this form an application to modify the permit and check the appropriate box in 3 below; or
 - If you do not have a GW remedial action permit, check here ☒ if the GW Monitoring Plan spreadsheet is attached. See Note N-2 below.
3. Per N.J.A.C. 7:26E-8.6(c)4, 5, 6, 7, 8, 12 and 13 complete the below and submit applicable documents with this form:
- ☐ Check here if question 2 in Section G was answered "No" and attach a table listing the regulatory, etc., changes;
- ☐ Check here if the answer to question 2 in Section J was "Yes" and attach a scaled map showing the locations of any new wells or water lines within the well search area;
- ☐ Check here if additional or replacement monitoring wells have been installed since the last submittal of the biennial certification and report, attach a map showing the locations of all monitoring wells associated with the CEA, the full monitoring well maintenance and evaluation log, and the construction specifications for each new or replacement well;
- ☐ Check here if the actual or proposed changes or reevaluation listed at N.J.A.C. 7:26E-8.6(c)8 require or required additional remediation and attach a brief description of the additional remediation conducted or planned.
- ☐ Check here if you are submitting an application to modify your remedial action permit for ground water;
- ☒ Check here if an explanation of why contaminants are still present in ground water and a brief description of any additional remediation conducted must be attached because sampling pursuant to N.J.A.C. 7:26E-8.6(b)7i showed that ground water contaminant concentrations did **not** decrease to or below standards throughout the entire CEA. See Note N-3 below.

NOTES:

The CEA boundary has been revised to separate into eastern and western portions along the Standard Chlorine Slurry Wall. This Biennial certification is submitted for the Site and does not apply to the Standard Chlorine remedial activities conducted in the western portion of the Site.

- (A) The RAR 2011 was considered as a remedial progress report
- (A-3) A Remedial Action Permit for Groundwater has not been applied for /obtained as a Remedial Action Report (RAR) has not yet been filed.
- (E-1) Great Lakes Dredge and Dock Co currently leases only a portion (approximately 20 acres) of the site in the eastern area.
- (L-1) In 2011 as part of an Interim Response Action Work Plan (IRAW) for the adjacent Standard Chlorine Chemical Company (SCCC) and Diamond Shamrock (Diamond) Sites, a slurry wall was extended onto the western portion of the Seaboard Site. Within the slurry wall, active pumping and treatment of groundwater was/is currently being conducted. The approximate area of the Seaboard Site that is contained within this slurry wall/active pump and treatment system is approximately 13 acres. Groundwater flow patterns were altered by the installation of this remedial component. Thus the groundwater monitoring program for the Seaboard Site was modified to address this "land disturbance".
- (M-1) The original CEA was established for a groundwater natural attenuation remedy because the NJDEP approved RAWP provided for that type of remedy. The remedial objective for groundwater as established in the RAWP is to meet surface and groundwater standards at the property boundary. Certain other areas of the site where groundwater flow direction is controlled by containment systems have Dense Non Aqueous Liquids (DNAPL) present in the subsurface. In these areas groundwater standards will not be met.
- (M-7) The CEA/WRA fact sheet has been revised to address the "land disturbance" discussed in Section L.1., above.
- (N-2) Exhibit B provides a Groundwater Monitoring Plan spreadsheet.
- (N-3) As discussed in Section M.1., DNAPL exists in some areas of the Site. These areas are largely contained but dissolved phase contaminants exist in these areas above groundwater standards. A DNAPL recovery system is operating at the Site. In addition, a funnel and gate treatment system utilizing granular activated carbon has been installed as a contingency measure to address dissolved phase organic contaminants prior to groundwater flowing off-site.

SECTION O. PERSON RESPONSIBLE FOR MONITORING THE PROTECTIVENESS OF THE REMEDIAL ACTION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for monitoring the Protectiveness of the Remediation: Beazer East, Inc. c/o Three Rivers Management, Inc.

Representative First Name: Michael Representative Last Name: Slenska

Title: Senior Environmental Manager

Phone Number: (412) 208-8867 Ext: _____ Fax: _____

Mailing Address: 1910 Cochran Road, Manor Oak One - Suite 200

City/Town: Pittsburgh State: PA Zip Code: 15220

Email Address: mike.slenska@trmi.biz

Relationship to the Site (check all that apply)

- ☐ I am the current Owner
- ☒ I am the current Operator
- ☐ I am the current Lessee
- ☒ I am the Person who conducted the remediation
- ☐ I am the Permittee
- ☐ I am the Co-Permittee

This certification shall be signed by the person responsible for submitting the remedial action protectiveness certification in accordance with the Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

I also understand that engineering and institutional controls must be evaluated and maintained to ensure they remain protective of public health and safety and the environment.

Based upon the information provided herein, I hereby certify that the remedial action(s) implemented at the site that includes engineering and/or institutional controls remains protective of public health and safety and the environment.

Signature:  Date: 8-9-2013

Name/Title: Michael Slenska, Senior Environmental Manager

SECTION P. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENTLSRP ID Number: 577508First Name: JohnLast Name: BolanPhone Number: (732) 560-9700Ext: 7286

Fax: _____

Mailing Address: 67A Mountain Boulevard EXT (P.O. Box 4039)City/Town: WarrenState: NJZip Code: 07059Email Address: jbolan@psands.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:☐ *directly oversaw and supervised all of the referenced remediation, and/or*☒ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____

Date: 8/12/2013LSRP Name/Title: John Bolan, P.E., Senior Associate**No Changes Since Last Submittal** ☐Company Name: Paulus, Sokolowski & Sartor LLC (PS&S)

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420


**New Jersey Department of Environmental Protection
Site Remediation Program**
**CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION
AREA (CEA/WRA) FACT SHEET FORM**
☒ LSRP

☐ Subsurface Evaluator

**Date Stamp
(For Department use only)**
SECTION A. SITE INFORMATION

Site Name: Former Koppers Seaboard Site, Kearny, Hudson County

Program Interest (PI) Number(s): G000001985

Case Tracking Number(s): NJD00244512

1. Indicate the reason for submission of this form:

☐ New CEA

☒ Revise CEA

☐ Existing CEA with no changes

☐ CEA Lift/Removal

If you are submitting this form for an existing CEA provide the CEA Subject Item ID: CEA1166917

2. Indicate the type of ground water Remedial Action (RA):

☒ Natural

☒ Active

☐ Final RA not yet selected

3. Has a Remedial Action Permit (RAP) application been submitted to the NJDEP? ☐ Yes ☒ No

SECTION B. CEA COMPONENT INFORMATION

1. **Contaminant(s):** This CEA/WRA applies only to the contaminants above the applicable numeric values established by Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, listed in the table below. List below the maximum value for all contaminants included in Exhibit A using any well or sampling point used to establish the CEA.

Contaminant	Concentration ⁽¹⁾	GWQS ⁽²⁾	SWQS ⁽³⁾	GWSL ⁽⁴⁾
See Exhibit A				

Notes: ⁽¹⁾ Maximum concentration in Micrograms Per Liter

⁽²⁾ New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C

⁽³⁾ Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.

⁽⁴⁾ Current NJDEP Vapor Intrusion Ground Water Screening Levels available at
<http://www.nj.gov/dep/srp/guidance/vaporintrusion/>
☒ Check if attaching an Addendum to list additional contaminants and associated information.

2. **CEA Boundaries:** Year of tax map used: 2008

For CEA revisions: ☒ check if CEA Boundary has changed (See instructions)

☒ check if Block and Lot numbers have changed (See instructions)

List the Block(s) and Lot(s) included in the areal extent of the Classification Exception Area:

Block(s)	Lot(s)	Check if off-site	Block(s)	Lot(s)	Check if off-site
287	60, 61.03,	<input type="checkbox"/>	287	portions of [32.01	<input type="checkbox"/>
	63, 70, 70.01,	<input type="checkbox"/>		55, 56, 61.02,	<input type="checkbox"/>
	71, 71.01	<input type="checkbox"/>		62]	<input type="checkbox"/>
	73, 80, and	<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>

☐ Check if attaching an Addendum to list additional Blocks/Lots and associated information.

Narrative description of proposed CEA:

A CEA was approved for the Site in August 2011. A revision of the CEA is being requested due to the installation of a subsurface slurry wall [Standard Chlorine Slurry Wall] associated with remedial activities for the adjacent property. The CEA is proposed to be revised into an eastern and western portion (divided by the Standard Chlorine Slurry Wall that extends onto the Seaboard Site). This fact sheet pertains to the EASTERN Portion of the Site. A separate fact sheet is provided for the western Portion.

Name(s) of the affected Geologic Formation(s)/Unit(s): Fill or Shallow Zone (per NJGeoweb: Salt-Marsh and Estuarine deposits)

Direction of ground water flow: South to S-West (If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions)

Ground Water Classification: Class II-A

Vertical Depth of CEA: 12 to 28 approx. (ft bgs) and -2 to -12 (msl).

Horizontal Extent of CEA: approx. 118 Indicate units: ☒ acres or ☐ square feet

3. Projected Term of CEA: (Based on modeling/calculations in Exhibit E)

Proposed Duration in Years: _____ Expected Expiration Date: _____

or ☒ Indeterminate

4. ATTACH THE FOLLOWING: (see instructions for additional information)

Exhibit A: Remedial Investigation Report – Per N.J.A.C 7:26C-7.3(a)3 submit the RIR;

Exhibit B: Site Location Maps – USGS Quadrangle Map;

Exhibit C: Site Map(s) and Cross Section – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what to include on the map(s) and the cross-section figure.

Exhibit D: GIS Deliverables – CEA Boundary Extent and CEA/WRA Spreadsheet – The CEA/WRA spreadsheet contains the vertical contaminant depth data for each sampling point used to prepare the CEA maps and cross-section figure, required by N.J.A.C 7:26C-7.3(c). The CEA Boundary Extent and CEA/WRA Spreadsheet shall be submitted via email to srpgis_cea@dep.state.nj.us. The CEA/WRA Spreadsheet shall also be included on the CD submitted with this form. See the instructions for both this form and the instructions for the CEA/WRA spreadsheet for more details.

For revisions, does the revised CEA map differ from CEA map on NJ-GeoWeb? ☒ Yes ☐ No ☐ N/A

Identify the format of the CEA Boundary Extent Map: ☐ Shape File ☒ CAD File

Exhibit E: Fate and Transport Description and Model Documentation

Is all the ground water contamination associated with the site the result of Historic Fill?..... ☐ Yes ☒ No

If "Yes," Fate and Transport Description and Model Documentation is not required.

If "No," submit all information required pursuant to N.J.A.C. 7:26C-7.3(b)2.

SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 2013
2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☒ Yes ☐ No ☐ N/A

SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (see instructions).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA?..... ☐ Yes ☒ No

If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d). (check all that apply)

2. **List of Names and Addresses** – List name/address of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA extent. See instructions for detailed information.

- [illegible]

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATIONFull Legal Name of the Person Responsible for Conducting the Remediation: Beazer East, Inc. c/o TRMIRepresentative First Name: Michael Representative Last Name: SlenskaTitle: Senior Environmental Manager, Beazer East, Inc. c/o Three Rivers Management, Inc.Phone Number: (412) 208-8867 Ext: _____ Fax: _____Mailing Address: 1910 Cochran Road, Manor Oak One - Suite 200City/Town: Pittsburgh State: PA Zip Code: 15220Email Address: mike.slenska@trmi.biz

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: Date: 8-9-2013Name/Title: Michael Slenska, Senior Environmental Manager**No changes to contact information since last submittal** ☒

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT **LSRP ID Number: 577508First Name: JohnLast Name: BolanPhone Number: (732) 560-9700Ext: 7286

Fax: _____

Mailing Address: 67A Mountain Boulevard EXT (P.O. Box 4039)City/Town: WarrenState: NJZip Code: 07059Email Address: jbolan@psands.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:☐ *directly oversaw and supervised all of the referenced remediation, and/or*☒ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____

Date: _____

LSRP Name/Title: John Bolan, P.E., Senior AssociateCompany Name: Paulus, Sokolowski & Sartor LLC (PS&S)**No Changes To Contact Information Since Last Submittal ☐**

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

SECTION G. SUBSURFACE EVALUATOR INFORMATION AND STATEMENT

I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.

Name: N/A UST Cert. No.: _____
Firm: _____ Firm's UST Cert. Number: _____
Firm Address: _____
City/Town: _____ State: _____ Zip Code: _____
Phone Number: _____ Ext: _____ Fax: _____
Signature: _____ Date: _____

No Changes To Contact Information Since Last Submittal ☐

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

ADDENDUM
Classification Exception Area / Well Restriction Area
Fact Sheet Form

Section B. CEA Component Information

1. **Contaminant(s):** This CEA/WRA applies only to the contaminants above the applicable numeric values established by Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, listed in the table below. List below the maximum value for all contaminants included in Exhibit A using any well or sampling point used to establish the CEA.

Contaminant	Concentration ⁽¹⁾	GWQS ⁽²⁾	SWQS ⁽³⁾	GWSL ⁽⁴⁾
See attached Exhibit A-				

Notes: ⁽¹⁾ Maximum concentration in Micrograms Per Liter
⁽²⁾ New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C
⁽³⁾ Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
⁽⁴⁾ Current NJDEP Vapor Intrusion Ground Water Screening Levels

2. **CEA Boundaries:**

Blocks(s) and Lot(s) included in the areal extent of the Classification Exception Area:

Year of tax map used: _____ For CEA revisions, check here if Block and Lot numbers have changed: ☐

Block(s)	Lot(s)	Check if off-site	Block(s)	Lot(s)	Check if off-site
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>


**New Jersey Department of Environmental Protection
Site Remediation Program**
**CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION
AREA (CEA/WRA) FACT SHEET FORM**
☒ LSRP

☐ Subsurface Evaluator

**Date Stamp
(For Department use only)**
SECTION A. SITE INFORMATION

 Site Name: Former Koppers Seaboard Site, Kearny, Hudson County

 Program Interest (PI) Number(s): G000001985

 Case Tracking Number(s): NJD00244512

1. Indicate the reason for submission of this form:

☐ New CEA

☒ Revise CEA

☐ Existing CEA with no changes

☐ CEA Lift/Removal

 If you are submitting this form for an existing CEA provide the CEA Subject Item ID: CEA1166917

2. Indicate the type of ground water Remedial Action (RA):

☒ Natural

☒ Active

☐ Final RA not yet selected

 3. Has a Remedial Action Permit (RAP) application been submitted to the NJDEP? ☐ Yes ☒ No

SECTION B. CEA COMPONENT INFORMATION

 1. **Contaminant(s):** This CEA/WRA applies only to the contaminants above the applicable numeric values established by Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, listed in the table below. List below the maximum value for all contaminants included in Exhibit A using any well or sampling point used to establish the CEA.

Contaminant	Concentration ⁽¹⁾	GWQS ⁽²⁾	SWQS ⁽³⁾	GWSL ⁽⁴⁾
See Exhibit A				

 Notes: ⁽¹⁾ Maximum concentration in Micrograms Per Liter

⁽²⁾ New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C

⁽³⁾ Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.

⁽⁴⁾ Current NJDEP Vapor Intrusion Ground Water Screening Levels available at <http://www.nj.gov/dep/srp/guidance/vaporintrusion/>
☒ Check if attaching an Addendum to list additional contaminants and associated information.

 2. **CEA Boundaries:** Year of tax map used: 2008

 For CEA revisions: ☒ check if CEA Boundary has changed (See instructions)

☒ check if Block and Lot numbers have changed (See instructions)

List the Block(s) and Lot(s) included in the areal extent of the Classification Exception Area:

Block(s)	Lot(s)	Check if off-site	Block(s)	Lot(s)	Check if off-site
287	54, and portions	<input type="checkbox"/>			<input type="checkbox"/>
	of [32.01, 55, 56,	<input type="checkbox"/>			<input type="checkbox"/>
	61.02 and 62]	<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>

☐ Check if attaching an Addendum to list additional Blocks/Lots and associated information.

Narrative description of proposed CEA:

A CEA was approved for the Site in August 2011. A revision of the CEA is being requested due to the installation of a subsurface slurry wall [Standard Chlorine Slurry Wall] associated with remedial activities for the adjacent property. The CEA is proposed to be revised into an eastern and western portion (divided by the Standard Chlorine Slurry Wall that extends onto the Seaboard Site). This fact sheet pertains to the WESTERN Portion of the Site. A separate fact sheet is provided for the eastern portion.

Name(s) of the affected Geologic Formation(s)/Unit(s): Fill or Shallow Zone (per NJGeoweb: Salt-Marsh and Estuarine deposits)

Direction of ground water flow: South to S-West (If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions)

Ground Water Classification: Class II-A

Vertical Depth of CEA: 12 to 28 approx. (ft bgs) and -2 to -12 (msl).

Horizontal Extent of CEA: approx. 13 Indicate units: ☒ acres or ☐ square feet

3. Projected Term of CEA: (Based on modeling/calculations in Exhibit E)

Proposed Duration in Years: _____ Expected Expiration Date: _____

or ☒ Indeterminate (*) See Note #1 on Page 4, below

4. ATTACH THE FOLLOWING: (see instructions for additional information)

Exhibit A: Remedial Investigation Report – Per N.J.A.C 7:26C-7.3(a)3 submit the RIR;

Exhibit B: Site Location Maps – USGS Quadrangle Map;

Exhibit C: Site Map(s) and Cross Section – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what to include on the map(s) and the cross-section figure.

Exhibit D: GIS Deliverables – CEA Boundary Extent and CEA/WRA Spreadsheet – The CEA/WRA spreadsheet contains the vertical contaminant depth data for each sampling point used to prepare the CEA maps and cross-section figure, required by N.J.A.C 7:26C-7.3(c). The CEA Boundary Extent and CEA/WRA Spreadsheet shall be submitted via email to srgis_cea@dep.state.nj.us. The CEA/WRA Spreadsheet shall also be included on the CD submitted with this form. See the instructions for both this form and the instructions for the CEA/WRA spreadsheet for more details.

For revisions, does the revised CEA map differ from CEA map on NJ-GeoWeb? ☒ Yes ☐ No ☐ N/A

Identify the format of the CEA Boundary Extent Map: ☐ Shape File ☒ CAD File

Exhibit E: Fate and Transport Description and Model Documentation

Is all the ground water contamination associated with the site the result of Historic Fill? ☐ Yes ☒ No

If "Yes," Fate and Transport Description and Model Documentation is not required.

If "No," submit all information required pursuant to N.J.A.C. 7:26C-7.3(b)2.

SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 2013
2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☒ Yes ☐ No ☐ N/A

SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (see instructions).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA? ☐ Yes ☒ No

If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d). (check all that apply)

- ☒ Municipal and county clerk(s)
☒ Local, county or regional health department(s)
☒ Designated County Environmental Health Act agency (if applicable)
☒ County Planning Board
☐ Pinelands Commission (if applicable)
☒ Owners of real property overlying CEA foot print

2. **List of Names and Addresses** – List name/address of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA extent. See instructions for detailed information.

- ☐
- Check here if
- no
- volatile contaminants are in the CEA

[illegible]

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION**Full Legal Name of the Person Responsible for Conducting the Remediation: Beazer East, Inc. c/o TRMIRepresentative First Name: Michael Representative Last Name: SlenskaTitle: Senior Environmental Manager, Beazer East, Inc. c/o Three Rivers Management, Inc.Phone Number: (207) 772-8100 Ext: _____ Fax: (207) 772-8101Mailing Address: 120 Exchange StreetCity/Town: Pittsburgh State: PA Zip Code: 15220Email Address: mike.slenska@trmi.biz

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: Date: 8-9-2013Name/Title: Michael Slenska, Senior Environmental Manager**No changes to contact information since last submittal** ☒**(*) Note #1**

A CEA for the shallow zone is requested for an indeterminate period of time because of

- 1) Free product is present in this area of the Site;
- 2) Contamination from an off-Site source is present in this area of the Site;
- 3) The remedy for the shallow groundwater at the Site consists of containment and active pump and treat, and
- 4) Historical fill contaminants are also present.

() Note #2**

The constituents associated with off-site contamination within this area are undergoing remediation as part of the Superfund activities at the adjacent Standard Chlorine site. The person responsible for conducting the remediation of this area is not solely responsible for the Superfund activities.

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT ***LSRP ID Number: 577508First Name: JohnLast Name: BolanPhone Number: (732) 560-9700Ext: 7286

Fax: _____

Mailing Address: 67A Mountain Boulevard EXT (P.O. Box 4039)City/Town: WarrenState: NJZip Code: 07059Email Address: jbolan@psands.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:☐ *directly oversaw and supervised all of the referenced remediation, and/or*☒ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____

Date: _____

LSRP Name/Title: John Bolan, P.E., Senior AssociateCompany Name: Paulus, Sokolowski & Sartor LLC (PS&S)**No Changes To Contact Information Since Last Submittal** ☐

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

(*) Note #3**

The constituents associated with off-site contamination within this area are undergoing remediation as part of the Superfund activities at the adjacent Standard Chlorine Site. The LSRP on record for this area is not responsible for the Superfund activities.

SECTION G. SUBSURFACE EVALUATOR INFORMATION AND STATEMENT

I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.

Name: N/A UST Cert. No.: _____
Firm: _____ Firm's UST Cert. Number: _____
Firm Address: _____
City/Town: _____ State: _____ Zip Code: _____
Phone Number: _____ Ext: _____ Fax: _____
Signature: _____ Date: _____

No Changes To Contact Information Since Last Submittal ☐

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT A
Contaminant Data Table**

Maximum detected concentration from Monitoring
Well sampling data (to include applicable GWQS,
applicable SWQS, VI GW screening levels)

A-1 Table 1 – East Side

A-2 Table 2 – West Side

KEY

Table 1 ~ CEA East
Shallow Zone Maximum Concentrations Exceeding GWQS
Former Kopper Seaboard Site ~ Kearny NJ

CONSTITUENT	UNITS	NJ Class IIA	NJ Class IIA	NJ SE-2	NJ SE-2	GWSL	Maximum	Max	Sampling
		GWQS 9/1998 ⁴	GWQS 7/2010	SWQC ⁵	SWQC 4/2011 ⁶	March 2013 ⁷	Concentration	Concentration	Date
Benzene	ug/l	1	1	71	3.3	20	2300	MW-124	6/6/2012
Methylene chloride	ug/l	2	3	1600		920	140 J	MW-124	5/2/2013
Xylene (total)	ug/l	40	1000			8600	620	MW-124	6/6/2012
2,4-Dimethylphenol	ug/l	100	100				2700	MW-124	5/2/2013
Benzo(a)anthracene	ug/l		0.1	0.031			2.5	MW-106R	5/1/2013
Benzo(a)pyrene	ug/l		0.1	0.031			2.2	MW-106R	5/1/2013
Benzo(b)fluoranthene	ug/l		0.2	0.031			6.4	PZ-04	6/7/2012
Benzo(k)fluoranthene	ug/l		0.5	0.031			1.1	MW-106R	5/1/2013
Dibenzo(a,h)anthracene	ug/l		0.3	0.031			0.48	MW-104	11/4/2008
Indeno(1,2,3-cd)pyrene	ug/l		0.2	0.031			1.2	MW-106R	5/1/2013
Naphthalene	ug/l		300			300	8600	MW-124	5/2/2013
Aluminum	ug/l	200	200				1300	MW-119	6/23/2011
Arsenic	ug/l	8	3	0.136			220	MW-106R	10/23/2012
Iron	ug/l	300	300				110000	MW-130	6/5/2012
Lead	ug/l	10	5				17.4	P-19	4/7/2009
Manganese	ug/l	50	50	100			32400	MW-118	6/18/2008
Selenium	ug/l	50	40				73	MW-102R	10/24/2012
Sodium	ug/l	50000	50000				3400000	MW-110R	6/6/2012
Vanadium	ug/l		60				38	MW-110R	6/6/2012
Available Cyanide	mg/l	0.2	0.1	0.001			0.97	MW-124	5/2/2013
Chloride	mg/l	250	250				6400	MW-112	5/2/2013
Sulfate AS (SO4)	mg/l	250	250				783	MW-118	4/8/2009

Notes:

- Maximum concentrations selected from sampling data from the most recent 24 months for constituents exceeding the applicable Groundwater Quality Standard for shallow wells onsite east of the Standard Chlorine slurry wall.
- Historic analytical data for wells P-20, P-22, W-9 and W-27 were not considered in the maximum concentrations as the wells contain residual/free product. A list of wells with known/measured DNAPL depth/thickness collected as part of the site groundwater monitoring program is included under Exhibit B Attachment C. Additionally, a figure showing the locations of known/estimated DNAPL limits is provided in Exhibit B Attachment D.
- GWQC = Groundwater Quality Criteria
GWSL = Ground Water Screening Levels
SWQC - Surface Water Quality Criteria
ug/l = micrograms per liter
J = estimated concentration
- NJ Class IIA GWQS applicable during submission of RAW 1998.
- NJ Class SE-2 SWQC applicable during submission of RAW 1998.
- Reduced by >= 1 order of magnitude
- GWSL from the NJ Vapor Intrusion Guidance, March 2013.

Table 2 ~ CEA West
Shallow Zone Maximum Concentrations Exceeding GWQS
Former Kopper Seaboard Site ~ Kearny NJ

CONSTITUENT	UNITS	NJ Class IIA GWQS 9/1998 ⁴	NJ Class IIA GWQS 7/2010	NJ SE-2 SWQC ⁵	NJ SE-2 SWQC 4/2011 ⁶	GWSL March 2013 ⁷	Maximum Concentration	Max Concentration Location	Sampling Date
Benzene	ug/l	1	1	71	3.3	20	410	MW-108	6/23/2011
Chlorobenzene	ug/l	4	50	21000		770	720	MW-108	6/23/2011
Methylene chloride	ug/l	2	3	1600		920	3.5 J	MW-109	4/28/2010
1,4-Dichlorobenzene	ug/l	75	75	3159		75	1300	MW-108	10/6/2010
Benzo(b)fluoranthene	ug/l		0.2	0.031			0.29	MW-120	4/28/2010
Indeno(1,2,3-cd)pyrene	ug/l		0.2	0.031			0.23	MW-120	10/14/2009
Aluminum	ug/l	200	200				1400	MW-108	4/29/2010
Arsenic	ug/l	8	3	0.136			12.9	MW-120	4/28/2010
Chromium	ug/l	100	70	3230			2160	MW-108	4/29/2010
Iron	ug/l	300	300				104000	MW-120	4/28/2010
Lead	ug/l	10	5				24	MW-108	4/29/2010
Manganese	ug/l	50	50	100			10700	MW-109	4/28/2010
Sodium	ug/l	50000	50000				1150000	MW-108	10/6/2010
Chloride	mg/l	250	250				1550	MW-109	4/28/2010
Sulfate AS (SO4)	mg/l	250	250				892	MW-120	10/14/2009

Notes:

- Maximum concentrations selected from sampling data from the most recent 24 months for constituents exceeding the applicable Groundwater Quality Standard for wells located on-site west of the Standard Chlorine slurry wall.
- Constituents deemed to be resultant from off-site source of contamination as referenced/approved in NJDEP letters dated December 31, 2009 NOD for Interim Response Action Work Plan Addendum No.1 for Standard Chlorine site and Diamond site and October 28, 2008 NOD for Phase II Supplemental RIWP for Standard Chlorine site and Diamond site. The constituents associated with off-site contamination within this (western) area of the site are undergoing remediation as part of the Superfund activities at the adjacent Standard Chlorine site.
- GWQC = Groundwater Quality Criteria
GWSL = Ground Water Screening Levels
SWQC = Surface Water Quality Criteria
ug/l = micrograms per liter
J = estimated concentration
- NJ Class IIA GWQS applicable during submission of RAW 1998.
- NJ Class SE-2 SWQC applicable during submission of RAW 1998.
- Reduced by ≥ 1 order of magnitude
- GWSL from the NJ Vapor Intrusion Guidance, March 2013.

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT B
Vapor Intrusion Documentation**

KEY

**2013 Vapor Intrusion Evaluation
Supporting Information
August, 2013
Former Koppers Seaboard Site
Kearny, Hudson County, New Jersey**

A review of the site information indicated that benzene and/or naphthalene are the only exceedances of the March 2013 NJDEP GW Screening Levels (see Table 1 of NJDEP Guidance document). All of the measured distances between the wells with exceedances and current on-site structures (the GW treatment building and the Clean Earth office trailer/ processing building) are greater than the 100 feet vertically and horizontally as per in N.J.A.C. 7:26E-1.15 (a) 1. Additionally, none of the wells, containing free product, are within 100 feet vertically or horizontally as per N.J.A.C. 7:26E-1.15 (a) 2. There is also no information, currently available, that indicates exceedances of the NJDEP soil gas or indoor air screening levels (see Table 1 of the VI Guidance), the presence of a wet basement or sump with free product or methane generating conditions in any on-site buildings. Therefore, in accordance with N.J.A.C. 7:26E-1.15, a receptor evaluation for vapor intrusion would not be warranted.

Attachment A

Groundwater Comparison Table

Tables 1 and 2 provide a comparison of groundwater sampling results for site wells east and west of the Standard Chlorine Slurry wall to groundwater vapor intrusion screening values (2007 and 2013). An exceedence of either standard is highlighted on the table.

Attachment B

Site Map

The enclosed Figures (3-1) provide several examples of the “Shallow Zone Potentiometric Surface Map” for the groundwater level measurements. Also provided on the maps are shallow zone monitoring well locations.

Attachment C

Apparent DNAPL Thickness Data

This table (3-3) provides a listing of on-site shallow zone monitoring wells and associated apparent DNAPL thickness (if any).

Attachment D

IRM System Location and DNAPL Limits

- Figure 1 provides on-site monitoring well locations west of the Standard Chlorine slurry wall.
- Figure (3-4) provides the locations of inferred DNAPL extent. Also provided on this figure is the location of on-site “Existing IRM Treatment System Building”.

2013
VAPOR INTRUSION EVALUATION
Supporting Information

FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

Attachment A
Groundwater Comparison Table

The table provides a comparison of groundwater sampling results for site wells east of the Standard Chlorine Slurry wall to groundwater vapor intrusion screening values (2007 and 2013). An exceedence of either standard is highlighted on the table.

KEY

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-102R 6/5/2012	MW-102R 10/24/2012	MW-102R 5/1/2013	MW-103 6/5/2012	MW-103 10/23/2012	MW-103 5/1/2013	MW-104 11/4/2008	MW-104 4/8/2009	MW-105 10/10/2006	MW-106R 6/5/2012	MW-106R 10/23/2012	MW-106R 5/1/2013
1,1,1-Trichloroethane	ug/l	2300	13000	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.25 U	0.25 U	0.54 U	0.29 U	0.29 U	0.29 U
1,1,2,2-Tetrachloroethane	ug/l	4	6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 U	0.15 U	0.54 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	ug/l	5	8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.47 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	ug/l	3600	50	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.24 U	0.59 U	0.12 U	0.12 U	0.12 U
1,1-Dichloroethylene	ug/l	250	260	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.28 U	0.28 U	0.64 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/l	2	3	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.54 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	ug/l	1	4	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.18 U	0.18 U	0.42 U	0.095 U	0.095 U	0.095 U
2-Butanone	ug/l	2700000	2500000	0.55 U	1.6 J	0.55 U	0.57 J	0.55 U	0.55 U	0.5 U	0.50 U	1.1 U	0.55 U	0.55 U	0.55 U
2-Hexanone	ug/l			0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.53 U	0.53 U	0.88 U	0.16 U	0.16 U	0.16 U
4-Methyl-2-pentanone	ug/l	880000	900000	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.23 U	0.23 U	1.1 U	0.53 U	0.53 U	0.53 U
Acetone	ug/l	1900000	21000000	4.8 J	4 JB	18	3.5 J	7.9 B	4.3 J	2.5 U	3.7 J	1.2 U	3.5 J	2.5 U	2.5 U
Benzene	ug/l	15	20	0.21 J	0.25 J	0.32 J	0.11 U	0.11 U	0.11 U	0.27 U	0.97 J	0.51 U	0.11 U	0.11 U	0.11 U
Bromodichloromethane	ug/l	5	2	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.2 U	0.20 U	0.37 U	0.13 U	0.13 U	0.13 U
Bromoform	ug/l	370	300	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.25 U	0.25 U	0.35 U	0.19 U	0.19 U	0.19 U
Bromomethane	ug/l	29	20	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.30 U	0.31 U	0.31 U	0.31 U	0.31 U
Carbon disulfide	ug/l	710	1500	0.21 U	0.24 J	0.65 J	0.21 U	0.21 U	0.21 U	0.2 U	0.20 U	0.40 U	0.21 U	0.21 U	0.21 U
Carbon Tetrachloride	ug/l	1	1	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.3 U	0.30 U	0.53 U	0.14 U	0.14 U	0.14 U
Chlorobenzene	ug/l	640	770	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.23 U	0.23 U	0.65 U	0.14 U	0.14 U	0.14 U
Chloroethane	ug/l	4	26000	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.25 U	0.25 U	0.37 U	0.21 U	0.21 U	0.21 U
Chloroform	ug/l	70	70	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.24 U	0.24 U	0.84 U	0.17 U	0.17 U	0.17 U
Chloromethane	ug/l	240	240	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.27 U	0.48 U	0.28 U	0.28 U	0.28 U
cis-1,2-Dichloroethylene	ug/l			0.24 U	0.24 U	0.19 U	0.24 U	0.24 U	0.19 U	0.27 U	0.27 U	1.2 J	0.24 U	0.24 U	0.19 U
cis-1,3-Dichloropropene	ug/l			0.19 U	0.19 U	0.24 U	0.19 U	0.19 U	0.24 U	0.19 U	0.19 U	0.35 U	0.19 U	0.19 U	0.24 U
Dibromochloromethane	ug/l	9	6	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	0.39 U	0.14 U	0.14 U	0.14 U
Ethylbenzene	ug/l	61000	700	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.18 U	0.29 J	0.42 U	0.23 U	0.23 U	0.23 U
Methylene chloride	ug/l	53	920	0.15 U	0.15 U	0.13 U	0.15 U	0.15 U	0.13 U	0.32 U	0.32 U	0.48 U	0.15 U	0.15 U	0.13 U
Styrene	ug/l	18000	180000	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.22 U	0.22 U	0.45 U	0.097 U	0.097 U	0.097 U
Tetrachloroethylene	ug/l	1	31	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.24 U	0.24 U	0.43 U	0.15 U	0.15 U	0.15 U
Toluene	ug/l	310000	330000	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.23 U	0.23 U	0.33 U	0.15 U	0.15 U	0.15 U
trans-1,2-Dichloroethene	ug/l	300	520	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.27 U	0.27 U	0.49 U	0.17 U	0.17 U	0.17 U
Trans-1,3-Dichloropropene	ug/l			0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.18 U	0.18 U	0.49 U	0.15 U	0.15 U	0.15 U
Trichloroethylene	ug/l	1	2	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.29 U	0.29 U	0.40 U	0.14 U	0.14 U	0.14 U
Vinyl chloride	ug/l	1	1	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.29 U	0.29 U	0.35 U	0.26 J	0.23 U	0.36 J
Xylene (total)	ug/l	7000	8600	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.62 U	0.62 U	0.46 U	0.49 U	0.49 U	3 U
1,2,4-Trichlorobenzene	ug/l	2800	130	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.15 U	0.15 U	0.41 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/l	5900	6800	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.22 U	0.22 U	0.48 U	0.15 U	0.15 U	0.15 U
1,3-Dichlorobenzene	ug/l			0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.16 U	0.16 U	0.48 U	0.11 U	0.11 U	0.11 U
1,4-Dichlorobenzene	ug/l	75	75	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U	0.18 U	0.20 U	0.21 U	0.21 U	0.21 U
2,4,5-Trichlorophenol	ug/l			0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.15 U	0.32 J	0.014 U	0.85 U	0.15 U	0.15 U	0.15 U
2,4,6-Trichlorophenol	ug/l			0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.15 J	0.0086 U	0.84 U	0.17 U	0.17 U	0.18 U
2,4-Dichlorophenol	ug/l			0.032 U	0.034 U	0.033 U	0.032 U	0.033 U	0.032 U	0.22	0.013 U	0.60 U	0.032 U	0.032 U	0.034 U
2,4-Dimethylphenol	ug/l			0.22 J	0.21 J	0.084 U	0.083 U	0.084 U	0.081 U	0.16 J	0.0075 U	1.2 U	0.083 U	0.082 U	0.086 U
2,4-Dinitrophenol	ug/l			0.59 U	0.63 U	0.6 U	0.6 U	0.6 U	0.58 U	0.7 J	0.58 U	1.1 U	0.6 U	0.59 U	0.62 U
2,4-Dinitrotoluene	ug/l			0.052 U	0.055 U	0.053 U	0.052 U	0.053 U	0.051 U	0.016 U	0.016 U	0.45 U	0.052 U	0.052 U	0.054 U
2-Chloronaphthalene	ug/l			0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.32 U	0.015 U	0.015 U	0.015 U
2-Chlorophenol	ug/l			0.16 U	0.17 U	0.16 U	0.16 U	0.16 U	0.16 U	0.11 J	0.020 U	0.53 U	0.16 U	0.16 U	0.17 U
2-Methylnaphthalene	ug/l			0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.11 J	0.068 J	0.37 U	0.012 U	0.045 J	0.25
2-Methylphenol	ug/l			0.083 U	0.089 U	0.085 U	0.084 U	0.085 U	0.082 U	0.14 J	0.013 U	0.91 U	0.084 U	0.083 U	0.087 U
2-Nitroaniline	ug/l			0.34 U	0.36 U	0.34 U	0.34 U	0.34 U	0.33 U	0.28 J	0.016 U	0.69 U	0.34 U	0.34 U	0.36 U

Table 1
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2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-102R 6/5/2012	MW-102R 10/24/2012	MW-102R 5/1/2013	MW-103 6/5/2012	MW-103 10/23/2012	MW-103 5/1/2013	MW-104 11/4/2008	MW-104 4/8/2009	MW-105 10/10/2006	MW-106R 6/5/2012	MW-106R 10/23/2012	MW-106R 5/1/2013
2-Nitrophenol	ug/l			0.16 U	0.18 U	0.17 U	0.17 U	0.17 U	0.16 U	0.014 U	0.013 U	1.0 U	0.17 U	0.16 U	0.17 U
3,3-Dichlorobenzidine	ug/l			0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U	0.036 U	0.034 U	2.1 U	0.11 U	0.11 U	0.11 U
3-Nitroaniline	ug/l			0.31 U	0.33 U	0.32 U	0.31 U	0.32 U	0.31 U	0.026 U	0.024 U	0.47 U	0.31 U	0.31 U	0.32 U
4,6-Dinitro-2-methylphenol	ug/l			0.21 U	0.23 U	0.22 U	0.21 U	0.22 U	0.21 U	0.77 U	0.73 U	0.37 U	0.21 U	0.21 U	0.22 U
4-Bromophenylphenyl ether	ug/l			0.061 U	0.065 U	0.062 U	0.062 U	0.062 U	0.06 U	0.22 J	0.018 U	0.46 U	0.062 U	0.061 U	0.061 U
4-Chloro-3-methylphenol	ug/l			0.073 U	0.078 U	0.074 U	0.073 U	0.074 U	0.072 U	0.33 J	0.024 U	0.75 U	0.073 U	0.073 U	0.076 U
4-Chloroaniline	ug/l			0.085 U	0.091 U	0.087 U	0.086 U	0.087 U	0.084 U	0.12 J	0.10 U	0.72 U	0.086 U	0.085 U	0.089 U
4-Chlorophenyl phenyl ether	ug/l			0.048 U	0.052 U	0.049 U	0.049 U	0.049 U	0.048 U	0.16 J	0.0098 U	0.24 U	0.049 U	0.048 U	0.051 U
4-Methylphenol	ug/l			---	---	0.088 U	---	---	0.086 U	0.43 J	0.017 U	0.89 U	---	---	0.27 J
4-Nitroaniline	ug/l			0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.16 U	0.14 J	0.021 U	0.49 U	0.17 U	0.17 U	0.17 U
4-Nitrophenol	ug/l			0.62 U	0.67 U	0.63 U	0.63 U	0.63 U	0.62 U	2.1 J	0.66 U	0.51 U	0.63 U	0.62 U	0.65 U
Acenaphthene	ug/l			0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.26	0.91	0.010 U	0.047 J	0.11 J	0.15 J
Acenaphthylene	ug/l			0.015 U	0.016 U	0.07 J	0.015 U	0.015 U	0.014 U	0.21	0.12 J	0.022 J	0.18 J	0.26	0.55
Anthracene	ug/l			0.51	0.29	0.56	0.15 U	0.16 J	0.23	0.55	0.31	0.1	0.21	0.24	0.98
Benzo(a)anthracene	ug/l			0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.5	0.017 U	0.020 U	0.014 U	0.014 U	2.5
Benzo(a)pyrene	ug/l			0.013 U	0.014 U	0.013 U	0.013 U	0.013 U	0.013 U	0.37	0.011 U	0.020 U	0.013 U	0.013 U	2.2
Benzo(b)fluoranthene	ug/l			0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	0.4	0.015 U	0.010 U	0.015 U	0.015 U	2.4
Benzo(ghi)perylene	ug/l			0.015 U	0.016 U	0.015 U	0.015 U	0.015 U	0.014 U	0.56	0.019 J	0.020 U	0.015 U	0.015 U	1.2
Benzo(k)fluoranthene	ug/l			0.053 U	0.056 U	0.054 U	0.053 U	0.054 U	0.052 U	0.4	0.015 U	0.030 U	0.053 U	0.053 U	1.1
Bis(2-chloroethoxy)methane	ug/l			0.056 U	0.06 U	0.057 U	0.056 U	0.057 U	0.055 U	0.21 J	0.013 U	0.34 U	0.056 U	0.056 U	0.059 U
Bis(2-chloroethyl)ether	ug/l			0.024 U	0.026 U	0.025 U	0.024 U	0.025 U	0.024 U	0.026 U	0.025 U	0.75 U	0.024 U	0.024 U	0.025 U
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			1.4 J	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	0.58 J	0.63 JB	0.42 U	1.2 U	1.2 U	1.3 U
Butyl benzyl phthalate	ug/l			0.14 U	0.15 U	0.14 U	0.2 JB	0.14 U	0.14 U	0.79 J	0.29 U	0.15 U	0.28 JB	0.14 U	0.14 U
Carbazole	ug/l			0.13 J	0.016 U	0.084 J	0.015 U	0.015 U	0.015 U	0.5	0.013 U	0.20 U	0.015 U	0.1 J	0.3
Chrysene	ug/l			0.013 U	0.014 U	0.014 U	0.014 U	0.014 U	0.013 U	0.46	0.010 U	0.010 U	0.014 U	0.013 U	2.1
Dibenzo(a,h)anthracene	ug/l			0.44	0.016 U	0.015 U	0.015 U	0.015 U	0.015 U	0.48	0.012 U	0.020 U	0.015 U	0.015 U	0.36
Dibenzofuran	ug/l			0.059 U	0.064 U	0.06 U	0.06 U	0.06 U	0.059 U	0.15 J	0.017 U	0.30 U	0.07 J	0.13 J	0.45 J
Diethyl phthalate	ug/l			0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.48 J	0.042 U	0.23 U	0.14 U	0.14 U	0.15 U
Dimethyl phthalate	ug/l			0.074 U	0.079 U	0.075 U	0.074 U	0.075 U	0.073 U	0.014 U	0.013 U	0.25 U	0.074 U	0.074 U	0.077 U
Di-n-butyl phthalate	ug/l			0.12 U	0.13 U	0.14 J	0.12 U	0.12 U	0.42 J	0.58 J	0.028 U	0.18 U	0.12 U	0.12 U	0.13 U
Di-n-octyl phthalate	ug/l			0.2 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U	0.43 J	0.015 U	0.35 U	0.2 U	0.2 U	0.21 U
Fluoranthene	ug/l			0.1 J	0.062 J	0.11 J	0.016 U	0.016 U	0.015 U	0.49	0.055 J	0.020 U	0.33	0.32	4.3
Fluorene	ug/l			0.021 U	0.022 U	0.051 J	0.021 U	0.021 U	0.021 U	0.2	0.0093 U	0.020 U	0.08 J	0.53	0.45
Hexachlorobenzene	ug/l			0.018 U	0.019 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.017 U	0.0080 U	0.018 U	0.018 U	0.018 U
Hexachlorobutadiene	ug/l	1	1	0.016 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.012 U	0.011 U	0.50 U	0.016 U	0.016 U	0.017 U
Hexachlorocyclopentadiene	ug/l			0.05 U	0.053 U	0.051 U	0.05 U	0.051 U	0.049 U	0.011 U	0.011 U	0.48 U	0.05 U	0.05 U	0.052 U
Hexachloroethane	ug/l			0.06 U	0.065 U	0.062 U	0.061 U	0.062 U	0.06 U	0.0076 U	0.0072 U	0.88 U	0.061 U	0.06 U	0.063 U
Indeno(1,2,3-cd)pyrene	ug/l			0.019 U	0.021 U	0.02 U	0.019 U	0.02 U	0.019 U	0.51	0.015 U	0.020 U	0.019 U	0.019 U	1.2
Isophorone	ug/l			0.062 U	0.066 U	0.063 U	0.063 U	0.063 U	0.061 U	0.029 U	0.027 U	0.20 U	0.063 U	0.062 U	0.065 U
Naphthalene	ug/l	---	300	1.1	1.3	0.87	0.014 U	0.014 U	0.013 U	0.17 J	2.1	0.024 B	0.07 JB	0.27	0.66
Nitrobenzene	ug/l			0.081 U	0.087 U	0.083 U	0.082 U	0.083 U	0.08 U	0.018 U	0.017 U	0.35 U	0.082 U	0.081 U	0.085 U
N-Nitrosodiphenylamine	ug/l			0.082 U	0.088 U	0.084 U	0.083 U	0.084 U	0.081 U	0.36	0.046 U	0.23 U	0.083 U	0.082 U	0.086 U
N-Nitrosodipropylamine	ug/l			0.03 U	0.032 U	0.03 U	0.03 U	0.03 U	0.029 U	0.038 U	0.036 U	0.56 U	0.03 U	0.03 U	0.031 U
Pentachlorophenol	ug/l			0.064 U	0.068 U	0.065 U	0.064 U	0.065 U	0.063 U	0.51 J	0.18 U	0.7	0.064 U	0.064 U	0.067 U
Phenanthrene	ug/l			0.32	0.044 U	0.27	0.041 U	0.042 U	0.041 U	0.52	0.11 JB	0.02 J	0.088 J	0.16 J	1.7
Phenol	ug/l			0.056 U	0.06 U	0.057 U	0.056 U	0.057 U	0.055 U	0.28	0.022 U	0.42 U	0.056 U	0.056 U	0.059 U
Pyrene	ug/l			0.06 J	0.016 U	0.065 J	0.029 J	0.015 U	0.015 U	0.84	0.2	0.030 J	0.21	0.19	3.2

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-110R 6/6/2012	MW-110R 5/1/2013	MW-112 6/6/2012	MW-112 5/2/2013	MW-113 6/6/2012	MW-113 10/24/2012	MW-113 5/2/2013	MW-116 6/6/2012	MW-116 5/2/2013	MW-117 6/5/2012	MW-117 4/30/2013	MW-118 6/18/2008
1,1,1-Trichloroethane	ug/l	2300	13000	0.57 U	0.29 U	1.1 U	0.57 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.11 U
1,1,2,2-Tetrachloroethane	ug/l	4	6	0.4 U	0.2 U	0.8 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.22 U
1,1,2-Trichloroethane	ug/l	5	8	0.4 U	0.2 U	0.81 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.11 U
1,1-Dichloroethane	ug/l	3600	50	0.23 U	0.12 U	0.47 U	0.23 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.19 U
1,1-Dichloroethylene	ug/l	250	260	0.59 U	0.3 U	1.2 U	0.59 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.17 U
1,2-Dichloroethane	ug/l	2	3	0.42 U	0.21 U	0.85 U	0.42 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.076 U
1,2-Dichloropropane	ug/l	1	4	0.19 U	0.095 U	0.38 U	0.19 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.24 U
2-Butanone	ug/l	2700000	2500000	1.1 U	0.55 U	2.2 U	7.7 J	0.55 U	0.55 U	0.55 U	5.4	5.8	0.55 U	0.55 U	0.65 U
2-Hexanone	ug/l			0.32 U	0.16 U	0.64 U	0.32 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.55 U
4-Methyl-2-pentanone	ug/l	880000	900000	1.1 U	0.53 U	2.1 U	3.1 J	0.53 U	0.53 U	0.53 U	0.55 J	0.53 U	0.53 U	0.53 U	0.61 U
Acetone	ug/l	1900000	21000000	5 U	4.6 J	11 J	100	2.5 U	2.5 U	2.5 U	50	37	2.5 U	4.2 J	2.5 U
Benzene	ug/l	15	20	7.6	10	2.8 J	4.7	0.11 U	0.14 J	0.11 U	0.93 J	0.79 J	0.11 U	0.11 U	0.19 U
Bromodichloromethane	ug/l	5	2	0.26 U	0.13 U	0.52 U	0.26 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.099 U
Bromoform	ug/l	370	300	0.38 U	0.19 U	0.77 U	0.38 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.27 U
Bromomethane	ug/l	29	20	0.63 U	0.31 U	1.3 U	0.63 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.18 U
Carbon disulfide	ug/l	710	1500	0.42 U	0.21 U	10	9.6	0.21 U	0.21 U	0.21 U	0.23 J	0.32 J	0.21 U	0.35 J	0.11 U
Carbon Tetrachloride	ug/l	1	1	0.27 U	0.14 U	0.55 U	0.27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.22 U
Chlorobenzene	ug/l	640	770	0.27 U	0.14 U	0.54 U	0.27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.33 U
Chloroethane	ug/l	4	26000	0.43 U	0.21 U	0.86 U	0.43 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.11 U
Chloroform	ug/l	70	70	0.34 U	0.17 U	0.68 U	0.34 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.068 U
Chloromethane	ug/l	240	240	0.57 U	0.28 U	1.1 U	0.57 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.14 U
cis-1,2-Dichloroethylene	ug/l			0.47 U	0.19 U	0.95 U	0.47 U	0.24 U	0.24 U	0.19 U	0.24 U	0.19 U	0.24 U	0.19 U	0.090 U
cis-1,3-Dichloropropene	ug/l			0.37 U	0.24 U	0.75 U	0.37 U	0.19 U	0.19 U	0.24 U	0.19 U	0.24 U	0.19 U	0.24 U	0.13 U
Dibromochloromethane	ug/l	9	6	0.27 U	0.14 U	0.55 U	0.27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.20 U
Ethylbenzene	ug/l	61000	700	0.45 U	0.49 J	0.91 U	0.82 J	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.066 U
Methylene chloride	ug/l	53	920	1.5 JB	0.13 U	1.4 JB	0.41 U	0.15 U	0.15 U	0.13 U	0.17 JB	0.13 U	0.15 U	0.13 U	0.19 U
Styrene	ug/l	18000	180000	0.19 U	0.097 U	0.39 U	0.19 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.25 U
Tetrachloroethylene	ug/l	1	31	0.3 U	0.15 U	0.59 U	0.3 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.088 U
Toluene	ug/l	310000	330000	0.37 J	0.44 J	0.6 U	0.89 J	0.15 U	0.15 U	0.15 U	0.34 J	0.29 J	0.15 U	0.15 U	0.21 U
trans-1,2-Dichloroethene	ug/l	300	520	0.34 U	0.17 U	0.68 U	0.34 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.097 U
Trans-1,3-Dichloropropene	ug/l			0.3 U	0.15 U	0.59 U	0.3 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U
Trichloroethylene	ug/l	1	2	0.29 U	0.14 U	0.57 U	0.29 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.22 U
Vinyl chloride	ug/l	1	1	0.45 U	0.23 U	0.91 U	0.45 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.11 U
Xylene (total)	ug/l	7000	8600	0.98 U	3.4	2 U	1.6 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.20 U
1,2,4-Trichlorobenzene	ug/l	2800	130	0.54 U	0.27 U	1.1 U	0.54 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.11 U
1,2-Dichlorobenzene	ug/l	5900	6800	0.3 U	0.15 U	0.61 U	0.3 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.086 U
1,3-Dichlorobenzene	ug/l			0.21 U	0.11 U	0.42 U	0.21 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
1,4-Dichlorobenzene	ug/l	75	75	0.41 U	0.21 U	0.82 U	0.41 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.10 U
2,4,5-Trichlorophenol	ug/l			0.76 U	0.15 U	0.15 U	0.73 U	0.15 U	0.16 U	0.15 U	0.15 U	0.44 U	0.15 U	0.15 U	0.060 U
2,4,6-Trichlorophenol	ug/l			0.87 U	0.17 U	0.18 U	0.83 U	0.17 U	0.18 U	0.17 U	0.17 U	0.51 U	0.17 U	0.17 U	0.055 U
2,4-Dichlorophenol	ug/l			0.17 U	0.032 U	0.034 U	0.16 U	0.032 U	0.034 U	0.032 U	0.033 U	0.097 U	0.032 U	0.032 U	0.047 U
2,4-Dimethylphenol	ug/l			3.2 J	8.8	0.086 U	16	0.083 U	0.088 U	0.081 U	2.2	0.55 J	0.082 U	0.083 U	0.050 U
2,4-Dinitrophenol	ug/l			3 U	0.59 U	0.62 U	2.9 U	0.6 U	0.63 U	0.58 U	0.61 U	1.8 U	0.59 U	0.6 U	1.2 U
2,4-Dinitrotoluene	ug/l			0.27 U	0.052 U	0.054 U	0.26 U	0.052 U	0.055 U	0.051 U	0.053 U	0.16 U	0.052 U	0.052 U	0.043 U
2-Chloronaphthalene	ug/l			0.075 U	0.015 U	0.015 U	0.072 U	0.015 U	0.016 U	0.014 U	0.015 U	0.044 U	0.015 U	0.015 U	0.042 U
2-Chlorophenol	ug/l			0.82 U	0.16 U	0.17 U	0.79 U	0.16 U	0.17 U	0.16 U	0.16 U	0.48 U	0.16 U	0.16 U	0.044 U
2-Methylnaphthalene	ug/l			0.32 J	0.42	0.02 J	0.058 U	0.012 U	0.15 J	0.66	0.18 J	0.13 J	0.012 U	0.012 U	0.045 U
2-Methylphenol	ug/l			0.43 U	0.083 U	0.087 U	11	0.084 U	0.089 U	0.082 U	1.5	1.4 J	0.083 U	0.084 U	0.049 U
2-Nitroaniline	ug/l			1.7 U	0.34 U	0.36 U	1.7 U	0.34 U	0.36 U	0.33 U	0.35 U	1 U	0.34 U	0.34 U	0.046 U

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Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-110R 6/6/2012	MW-110R 5/1/2013	MW-112 6/6/2012	MW-112 5/2/2013	MW-113 6/6/2012	MW-113 10/24/2012	MW-113 5/2/2013	MW-116 6/6/2012	MW-116 5/2/2013	MW-117 6/5/2012	MW-117 4/30/2013	MW-118 6/18/2008
2-Nitrophenol	ug/l			0.84 U	0.16 U	0.17 U	0.81 U	0.17 U	0.18 U	0.16 U	0.17 U	0.5 U	0.16 U	0.17 U	0.052 U
3,3-Dichlorobenzidine	ug/l			0.55 U	0.11 U	0.11 U	0.53 U	0.11 U	0.12 U	0.11 U	0.11 U	0.33 U	0.11 U	0.11 U	0.039 U
3-Nitroaniline	ug/l			1.6 U	0.31 U	0.32 U	1.5 U	0.31 U	0.33 U	0.31 U	0.32 U	0.94 U	0.31 U	0.31 U	0.039 U
4,6-Dinitro-2-methylphenol	ug/l			1.1 U	0.21 U	0.22 U	1 U	0.21 U	0.23 U	0.21 U	0.22 U	0.64 U	0.21 U	0.21 U	1.4 U
4-Bromophenylphenyl ether	ug/l			0.31 U	0.061 U	0.064 U	0.3 U	0.062 U	0.065 U	0.06 U	0.063 U	0.18 U	0.061 U	0.062 U	0.048 U
4-Chloro-3-methylphenol	ug/l			0.37 U	0.073 U	0.076 U	0.36 U	0.073 U	0.078 U	0.072 U	0.075 U	0.22 U	0.073 U	0.073 U	0.057 U
4-Chloroaniline	ug/l			0.44 U	0.085 U	0.089 U	0.42 U	0.086 U	0.091 U	0.084 U	0.088 U	0.26 U	0.085 U	0.086 U	0.044 U
4-Chlorophenyl phenyl ether	ug/l			0.25 U	0.048 U	0.051 U	0.24 U	0.049 U	0.052 U	0.048 U	0.05 U	0.15 U	0.048 U	0.049 U	0.041 U
4-Methylphenol	ug/l			---	0.087 U	---	6.5	---	---	0.086 U	---	2.1 J	---	0.088 U	0.071 U
4-Nitroaniline	ug/l			0.85 U	0.17 U	0.17 U	0.82 U	0.17 U	0.18 U	0.16 U	0.17 U	0.5 U	0.17 U	0.17 U	0.024 U
4-Nitrophenol	ug/l			3.2 U	0.62 U	0.65 U	3.1 U	0.63 U	0.67 U	0.62 U	0.64 U	1.9 U	0.62 U	0.63 U	0.067 U
Acenaphthene	ug/l			0.46 J	0.46	0.099 J	3.6	7.2	10	10	5.5	7.3	0.014 U	0.014 U	0.45
Acenaphthylene	ug/l			0.47 J	0.77	0.14 J	0.52 J	0.24	0.26	0.36	0.1 J	0.095 J	0.13 J	0.16 J	0.044 U
Anthracene	ug/l			1.6	3.5	0.15 U	0.96	1.1	1.3	1.1	4.3	3.9	0.69	0.79	0.5
Benzo(a)anthracene	ug/l			0.073 U	0.24	0.37	0.07 U	0.13 J	0.13 J	0.12 J	0.015 U	0.043 U	0.014 U	0.014 U	0.039 U
Benzo(a)pyrene	ug/l			0.066 U	0.074 J	0.26	0.064 U	0.013 U	0.014 U	0.013 U	0.013 U	0.039 U	0.013 U	0.013 U	0.042 U
Benzo(b)fluoranthene	ug/l			0.078 U	0.015 U	0.43	0.075 U	0.015 U	0.016 U	0.032 J	0.016 U	0.046 U	0.015 U	0.015 U	0.030 U
Benzo(ghi)perylene	ug/l			0.075 U	0.039 J	0.18 J	0.072 U	0.015 U	0.016 U	0.014 U	0.015 U	0.044 U	0.015 U	0.015 U	0.026 U
Benzo(k)fluoranthene	ug/l			0.27 U	0.053 U	0.055 U	0.26 U	0.053 U	0.056 U	0.052 U	0.054 U	0.16 U	0.053 U	0.053 U	0.038 U
Bis(2-chloroethoxy)methane	ug/l			0.29 U	0.056 U	0.059 U	0.28 U	0.056 U	0.06 U	0.055 U	0.058 U	0.17 U	0.056 U	0.056 U	0.12 U
Bis(2-chloroethyl)ether	ug/l			0.12 U	0.024 U	0.025 U	0.12 U	0.024 U	0.026 U	0.024 U	0.025 U	0.073 U	0.024 U	0.024 U	0.044 U
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			6.2 U	1.2 U	1.3 U	6 U	1.2 U	1.3 U	1.2 U	1.2 U	3.7 U	1.2 U	1.2 U	0.48 JB
Butyl benzyl phthalate	ug/l			0.7 U	0.14 U	0.19 J	0.68 U	0.14 U	0.15 U	0.14 U	0.14 U	0.41 U	0.14 U	0.14 U	0.13 U
Carbazole	ug/l			0.67 J	0.92	0.15 J	1.3	1	1.1	0.94	19	6.1	0.063 J	0.015 U	0.072 J
Chrysene	ug/l			0.069 U	0.13 J	0.25	0.067 U	0.11 J	0.12 J	0.094 J	0.014 U	0.041 U	0.013 U	0.014 U	0.034 U
Dibenzo(a,h)anthracene	ug/l			0.077 U	0.015 U	0.016 U	0.074 U	0.015 U	0.016 U	0.015 U	0.015 U	0.045 U	0.015 U	0.015 U	0.033 U
Dibenzofuran	ug/l			0.8 J	0.67 J	0.097 J	0.29 U	1.9	2.1	2.1	1.6	2 J	0.059 U	0.06 U	0.15 J
Diethyl phthalate	ug/l			0.72 U	0.14 U	0.15 U	0.7 U	0.14 U	0.25 U	0.18 J	0.14 U	0.43 U	0.14 U	0.14 U	0.23 U
Dimethyl phthalate	ug/l			0.38 U	0.074 U	0.077 U	0.36 U	0.074 U	0.079 U	0.073 U	0.076 U	0.22 U	0.074 U	0.074 U	0.041 U
Di-n-butyl phthalate	ug/l			0.62 U	1.6	0.13 U	0.59 U	0.12 U	0.13 U	0.12 U	0.12 U	0.36 U	0.12 U	0.12 U	0.045 U
Di-n-octyl phthalate	ug/l			1.0 U	0.2 U	0.21 U	0.98 U	0.2 U	0.21 U	0.2 U	0.2 U	0.6 U	0.2 U	0.2 U	0.041 U
Fluoranthene	ug/l			0.63 J	0.75	0.92	0.23 J	2.6	2.7	2.1	0.48	0.42 J	0.016 U	0.016 U	0.11 J
Fluorene	ug/l			0.91 J	0.89	0.16 J	0.1 U	5.1	5.5	5.1	6.4	7.7	0.021 U	0.021 U	0.26
Hexachlorobenzene	ug/l			0.091 U	0.018 U	0.018 U	0.087 U	0.018 U	0.019 U	0.017 U	0.018 U	0.053 U	0.018 U	0.018 U	0.042 U
Hexachlorobutadiene	ug/l	1	1	0.082 U	0.016 U	0.017 U	0.079 U	0.016 U	0.017 U	0.016 U	0.016 U	0.048 U	0.016 U	0.016 U	0.036 U
Hexachlorocyclopentadiene	ug/l			0.26 U	0.05 U	0.052 U	0.25 U	0.05 U	0.053 U	0.049 U	0.051 U	0.15 U	0.05 U	0.05 U	0.077 U
Hexachloroethane	ug/l			0.31 U	0.06 U	0.063 U	0.3 U	0.061 U	0.065 U	0.06 U	0.062 U	0.18 U	0.06 U	0.061 U	0.042 U
Indeno(1,2,3-cd)pyrene	ug/l			0.099 U	0.066 J	0.16 J	0.095 U	0.019 U	0.021 U	0.019 U	0.02 U	0.058 U	0.019 U	0.019 U	0.046 U
Isophorone	ug/l			0.32 U	0.062	0.065 U	0.31 U	0.063 U	0.066 U	0.061 U	0.42 J	0.19 U	0.062 U	0.063 U	0.045 U
Naphthalene	ug/l	---	300	8.5	34	0.45 B	17	0.014 U	0.014 U	1 B	1.2	0.6 B	0.013 U	0.014 U	0.041 U
Nitrobenzene	ug/l			0.42 U	0.081 U	0.085 U	0.4 U	0.082 U	0.087 U	0.08 U	0.083 U	0.25 U	0.081 U	0.082 U	0.061 U
N-Nitrosodiphenylamine	ug/l			0.42 U	0.082 U	0.086 U	0.41 U	0.083 U	0.088 U	0.081 U	0.084 U	0.25 U	0.082 U	0.083 U	0.047 U
N-Nitrosodipropylamine	ug/l			0.15 U	0.03 U	0.031 U	0.15 U	0.03 U	0.032 U	0.029 U	0.03 U	0.09 U	0.03 U	0.03 U	0.057 U
Pentachlorophenol	ug/l			0.33 U	0.064 U	0.067 U	0.32 U	0.064 U	0.068 U	0.063 U	0.066 U	0.19 U	0.064 U	0.064 U	0.080 U
Phenanthrene	ug/l			0.7 J	0.88	0.42	0.2 U	4.3	6.1	5.7	2.5	1.6	0.041 U	0.041 U	0.14 JB
Phenol	ug/l			0.52 J	0.78	0.059 U	37	0.056 U	0.06 U	0.055 U	22	16	0.056 U	0.056 U	0.021 U
Pyrene	ug/l			0.39 J	0.33	0.85	0.075 U	1.6	1.8	1.4	0.26	0.28 J	0.015 U	0.015 U	0.077 J

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Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-118 4/8/2009	MW-118R 6/5/2012	MW-118R 4/30/2013	MW-119 10/14/2009	MW-119 6/23/2011	MW-119R 6/6/2012	MW-119R 5/1/2013	MW-121 6/6/2012	MW-121 5/2/2013	MW-122 6/6/2012	MW-122 5/1/2013	MW-123 4/8/2009
1,1,1-Trichloroethane	ug/l	2300	13000	0.25 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.25 U
1,1,2,2-Tetrachloroethane	ug/l	4	6	0.15 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 U
1,1,2-Trichloroethane	ug/l	5	8	0.20 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U
1,1-Dichloroethane	ug/l	3600	50	0.24 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U
1,1-Dichloroethylene	ug/l	250	260	0.28 U	0.3 U	0.3 U	0.30 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.28 U
1,2-Dichloroethane	ug/l	2	3	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	ug/l	1	4	0.18 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.18 U
2-Butanone	ug/l	2700000	2500000	0.50 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.50 U
2-Hexanone	ug/l			0.53 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.53 U
4-Methyl-2-pentanone	ug/l	880000	900000	0.23 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.23 U
Acetone	ug/l	1900000	21000000	2.5 U	2.5 U	2.5 U	4.3 JB	2.5 U	2.5 U	3.4 J	2.5 U	2.5 U	2.5 U	3.7 J	2.5 U
Benzene	ug/l	15	20	0.27 U	0.11 U	0.11 U	0.11 U	0.17 J	0.19 J	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U
Bromodichloromethane	ug/l	5	2	0.20 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.20 U
Bromoform	ug/l	370	300	0.25 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.25 U
Bromomethane	ug/l	29	20	0.30 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.30 U
Carbon disulfide	ug/l	710	1500	0.20 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.20 U
Carbon Tetrachloride	ug/l	1	1	0.30 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.30 U
Chlorobenzene	ug/l	640	770	0.23 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.23 U
Chloroethane	ug/l	4	26000	0.25 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.25 U
Chloroform	ug/l	70	70	0.24 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.24 U
Chloromethane	ug/l	240	240	0.27 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U
cis-1,2-Dichloroethylene	ug/l			0.27 U	0.24 U	0.19 U	0.24 U	0.24 U	0.24 U	0.19 U	0.24 U	0.24 U	0.19 U	0.24 U	0.27 U
cis-1,3-Dichloropropene	ug/l			0.19 U	0.19 U	0.24 U	0.19 U	0.19 U	0.19 U	0.24 U	0.19 U	0.24 U	0.19 U	0.24 U	0.19 U
Dibromochloromethane	ug/l	9	6	0.16 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
Ethylbenzene	ug/l	61000	700	0.18 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.43 J	0.18 U
Methylene chloride	ug/l	53	920	0.32 U	0.15 U	0.13 U	0.15 U	0.15 U	0.15 U	0.13 U	0.15 U	0.13 U	0.15 U	0.13 U	0.32 U
Styrene	ug/l	18000	180000	0.22 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	0.22 U
Tetrachloroethylene	ug/l	1	31	0.24 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.24 U
Toluene	ug/l	310000	330000	0.23 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.23 U
trans-1,2-Dichloroethene	ug/l	300	520	0.27 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.27 U
Trans-1,3-Dichloropropene	ug/l			0.18 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.18 U
Trichloroethylene	ug/l	1	2	0.29 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.29 U
Vinyl chloride	ug/l	1	1	0.29 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.29 U
Xylene (total)	ug/l	7000	8600	0.62 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.62 U
1,2,4-Trichlorobenzene	ug/l	2800	130	0.15 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.15 U
1,2-Dichlorobenzene	ug/l	5900	6800	0.22 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.22 U
1,3-Dichlorobenzene	ug/l			0.16 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.16 U
1,4-Dichlorobenzene	ug/l	75	75	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U
2,4,5-Trichlorophenol	ug/l			0.016 U	0.15 U	0.15 U	0.015 U	0.14 U	0.15 U	0.15 U	0.44 U	0.15 U	0.15 U	0.15 U	0.015 U
2,4,6-Trichlorophenol	ug/l			0.0096 U	0.17 U	0.17 U	0.0089 U	0.17 U	0.17 U	0.17 U	0.5 U	0.17 U	0.17 U	0.17 U	0.0089 U
2,4-Dichlorophenol	ug/l			0.014 U	0.032 U	0.033 U	0.013 U	0.032 U	0.032 U	0.033 U	0.095 U	0.032 U	0.033 U	0.033 U	0.013 U
2,4-Dimethylphenol	ug/l			0.0084 U	0.082 U	0.085 U	0.0078 U	0.08 U	0.13 J	0.085 U	6.5	0.081 U	0.085 U	0.084 U	0.0078 U
2,4-Dinitrophenol	ug/l			0.64 U	0.59 U	0.61 U	0.60 U	0.58 U	0.6 U	0.61 U	1.8 U	0.58 U	0.61 U	0.61 U	0.60 U
2,4-Dinitrotoluene	ug/l			0.017 U	0.052 U	0.054 U	0.016 U	0.051 U	0.052 U	0.054 U	0.15 U	0.051 U	0.054 U	0.053 U	0.016 U
2-Chloronaphthalene	ug/l			0.016 U	0.015 U	0.015 U	0.015 U	0.014 U	0.015 U	0.015 U	0.043 U	0.014 U	0.015 U	0.015 U	0.015 U
2-Chlorophenol	ug/l			0.022 U	0.16 U	0.17 U	0.021 U	0.16 U	0.16 U	0.17 U	0.47 U	0.16 U	0.17 U	0.16 U	0.021 U
2-Methylnaphthalene	ug/l			0.016 U	0.012 U	0.012 U	0.059 J	0.012 U	0.013 J	0.012 U	0.035 U	0.026 J	0.012 U	0.012 U	0.096 J
2-Methylphenol	ug/l			0.015 U	0.083 U	0.086 U	0.014 U	0.081 U	0.084 U	0.086 U	4.3	0.082 U	0.086 U	0.085 U	0.014 U
2-Nitroaniline	ug/l			0.017 U	0.34 U	0.35 U	0.016 U	0.33 U	0.34 U	0.35 U	1 U	0.33 U	0.35 U	0.35 U	0.016 U

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-118 4/8/2009	MW-118R 6/5/2012	MW-118R 4/30/2013	MW-119 10/14/2009	MW-119 6/23/2011	MW-119R 6/6/2012	MW-119R 5/1/2013	MW-121 6/6/2012	MW-121 5/2/2013	MW-122 6/6/2012	MW-122 5/1/2013	MW-123 4/8/2009
2-Nitrophenol	ug/l			0.015 U	0.16 U	0.17 U	0.014 U	0.16 U	0.17 U	0.17 U	0.49 U	0.16 U	0.17 U	0.17 U	0.014 U
3,3-Dichlorobenzidine	ug/l			0.038 U	0.11 U	0.11 U	0.035 U	0.11 U	0.11 U	0.11 U	0.32 U	0.11 U	0.11 U	0.11 U	0.035 U
3-Nitroaniline	ug/l			0.027 U	0.31 U	0.32 U	0.025 U	0.3 U	0.31 U	0.32 U	0.92 U	0.31 U	0.32 U	0.32 U	0.025 U
4,6-Dinitro-2-methylphenol	ug/l			0.82 U	0.21 U	0.22 U	0.76 U	0.21 U	0.21 U	0.22 U	0.63 U	0.21 U	0.22 U	0.22 U	0.76 U
4-Bromophenylphenyl ether	ug/l			0.020 U	0.061 U	0.064 U	0.018 U	0.06 U	0.062 U	0.064 U	0.18 U	0.06 U	0.064 U	0.063 U	0.018 U
4-Chloro-3-methylphenol	ug/l			0.027 U	0.073 U	0.075 U	0.025 U	0.071 U	0.073 U	0.075 U	0.22 U	0.072 U	0.075 U	0.075 U	0.025 U
4-Chloroaniline	ug/l			0.11 U	0.085 U	0.089 U	0.11 U	0.083 U	0.086 U	0.089 U	0.25 U	0.084 U	0.089 U	0.088 U	0.11 U
4-Chlorophenyl phenyl ether	ug/l			0.011 U	0.048 U	0.05 U	0.010 U	0.047 U	0.049 U	0.05 U	0.14 U	0.048 U	0.05 U	0.05 U	0.010 U
4-Methylphenol	ug/l			0.019 U	---	0.09 U	0.017 U	---	---	0.09 U	---	0.086 U	---	0.089 U	0.017 U
4-Nitroaniline	ug/l			0.024 U	0.17 U	0.17 U	0.022 U	0.16 U	0.17 U	0.17 U	0.49 U	0.16 U	0.17 U	0.17 U	0.022 U
4-Nitrophenol	ug/l			0.74 U	0.62 U	0.65 U	0.69 U	0.61 U	0.63 U	0.65 U	1.8 U	0.62 U	0.65 U	0.64 U	0.69 U
Acenaphthene	ug/l			0.24	0.34	0.23	10	7.3	6.2	3.8	3.8	0.17 J	3	2.2	0.13 J
Acenaphthylene	ug/l			0.0089 U	0.015 U	0.015 U	3	1.7	1.3	0.84	0.31 J	0.29	1.5	1.4	0.030 J
Anthracene	ug/l			0.51	0.38	0.32	0.64	0.74	0.38	0.4	0.77	0.28	0.15 U	0.34	0.21
Benzo(a)anthracene	ug/l			0.018 U	0.014 U	0.015 U	0.95	0.46	0.27	0.26	0.042 U	0.31	0.015 U	0.015 U	0.017 U
Benzo(a)pyrene	ug/l			0.012 U	0.013 U	0.013 U	0.58	0.18 J	0.013 U	0.08 J	0.038 U	0.21	0.013 U	0.013 U	0.047 J
Benzo(b)fluoranthene	ug/l			0.017 U	0.015 U	0.016 U	0.7	0.16 J	0.015 U	0.12 J	0.045 U	0.29	0.016 U	0.016 U	0.016 U
Benzo(ghi)perylene	ug/l			0.0091 U	0.015 U	0.015 U	0.41	0.18 J	0.015 U	0.028 J	0.043 U	0.16 J	0.015 U	0.015 U	0.11 J
Benzo(k)fluoranthene	ug/l			0.017 U	0.053 U	0.055 U	0.36	0.052 U	0.053 U	0.059 J	0.16 U	0.096 J	0.055 U	0.054 U	0.016 U
Bis(2-chloroethoxy)methane	ug/l			0.014 U	0.056 U	0.058 U	0.013 U	0.055 U	0.056 U	0.058 U	0.17 U	0.055 U	0.058 U	0.058 U	0.013 U
Bis(2-chloroethyl)ether	ug/l			0.028 U	0.024 U	0.025 U	0.026 U	0.024 U	0.024 U	0.025 U	0.072 U	0.024 U	0.025 U	0.025 U	0.026 U
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			0.77 JB	1.2 U	1.3 U	0.045 U	1.2 U	1.2 U	1.3 U	3.6 U	1.2 U	1.3 U	1.2 U	0.68 JB
Butyl benzyl phthalate	ug/l			0.32 U	0.14 U	0.14 U	0.30 U	0.13 U	0.14 U	0.14 U	0.41 U	0.14 U	0.14 U	0.14 U	0.30 U
Carbazole	ug/l			0.014 U	0.015 U	0.016 U	4.6	1.3	0.76	0.057 J	1.2	0.21	0.043 J	0.03 J	0.053 J
Chrysene	ug/l			0.011 U	0.013 U	0.014 U	0.91	0.33	0.18 J	0.18 J	0.04 U	0.3	0.014 U	0.014 U	0.011 U
Dibenzo(a,h)anthracene	ug/l			0.013 U	0.015 U	0.016 U	0.26	0.28	0.015 U	0.016 U	0.044 U	0.051 J	0.016 U	0.015 U	0.11 J
Dibenzofuran	ug/l			0.019 U	0.059 U	0.062 U	3.3	3.3	2.4	0.86 J	0.43 J	0.31 J	0.062 U	0.061 U	0.088 J
Diethyl phthalate	ug/l			0.25 J	0.14 U	0.15 U	0.044 U	0.14 U	0.14 U	0.15 U	0.42 U	0.14 U	0.15 U	0.14 U	0.28 J
Dimethyl phthalate	ug/l			0.015 U	0.074 U	0.077 U	0.014 U	0.072 U	0.074 U	0.077 U	0.22 U	0.073 U	0.077 U	0.076 U	0.014 U
Di-n-butyl phthalate	ug/l			0.031 U	0.12 U	0.12 U	0.029 U	0.12 U	0.12 U	0.99 J	0.36 U	0.12 U	0.12 U	0.13 J	0.10 J
Di-n-octyl phthalate	ug/l			0.016 U	0.2 U	0.21 U	0.015 U	0.19 U	0.2 U	0.21 U	0.59 U	0.2 U	0.21 U	0.2 U	0.015 U
Fluoranthene	ug/l			0.057 J	0.079 J	0.059 J	8.3	3.9	5.2	4.1	0.046 U	1	0.93	1.6	0.047 J
Fluorene	ug/l			0.010 U	0.021 U	0.022 U	0.0097 U	0.9	0.12 J	0.076 J	0.81	0.28	0.022 U	0.021 U	0.089 J
Hexachlorobenzene	ug/l			0.019 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.018 U	0.052 U	0.017 U	0.018 U	0.018 U	0.018 U
Hexachlorobutadiene	ug/l	1	1	0.013 U	0.016 U	0.017 U	0.012 U	0.016 U	0.016 U	0.017 U	0.047 U	0.016 U	0.017 U	0.016 U	0.012 U
Hexachlorocyclopentadiene	ug/l			0.012 U	0.05 U	0.052 U	0.011 U	0.049 U	0.05 U	0.052 U	0.15 U	0.049 U	0.052 U	0.051 U	0.011 U
Hexachloroethane	ug/l			0.0081 U	0.06 U	0.063 U	0.0075 U	0.059 U	0.061 U	0.063 U	0.18 U	0.06 U	0.063 U	0.062 U	0.0075 U
Indeno(1,2,3-cd)pyrene	ug/l			0.017 U	0.019 U	0.02 U	0.45	0.38	0.019 U	0.043 J	0.057 U	0.14 J	0.02 U	0.02 U	0.44
Isophorone	ug/l			0.030 U	0.062 U	0.064 U	0.028 U	0.061 U	0.063 U	0.064 U	0.18 U	0.061 U	0.064 U	0.064 U	0.028 U
Naphthalene	ug/l	---	300	0.029 U	0.013 U	0.014 U	0.43	0.42 B	0.33B	0.05 J	15	0.52 B	0.057 JB	0.014 U	0.64
Nitrobenzene	ug/l			0.019 U	0.081 U	0.084 U	0.018 U	0.08 U	0.082 U	0.084 U	0.24 U	0.08 U	0.084 U	0.083 U	0.018 U
N-Nitrosodiphenylamine	ug/l			0.051 U	0.082 U	0.085 U	0.048 U	0.08 U	0.083 U	0.085 U	0.24 U	0.081 U	0.085 U	0.084 U	0.048 U
N-Nitrosodipropylamine	ug/l			0.041 U	0.03 U	0.031 U	0.038 U	0.029 U	0.03 U	0.031 U	0.088 U	0.029 U	0.031 U	0.03 U	0.038 U
Pentachlorophenol	ug/l			0.20 U	0.064 U	0.066 U	0.18 U	0.063 U	0.064 U	0.066 U	0.19 U	0.063 U	0.066 U	0.066 U	0.18 U
Phenanthrene	ug/l			0.030 U	0.041 U	0.043 U	0.88	0.99	0.15 J	0.079 J	0.37 J	0.41	0.057 J	0.053 J	0.12 JB
Phenol	ug/l			0.025 U	0.056 U	0.058 U	0.023 U	0.055 U	0.056 U	0.058 U	27	0.055 U	0.058 U	0.058 U	0.023 U
Pyrene	ug/l			0.054 J	0.035 J	0.034 J	4.7	2.4	3.4	2.5	0.045 U	0.94	0.83	1.1	0.044 J

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2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-123 10/13/2009	MW-123R 6/5/2012	MW-123R 5/1/2013	MW-124 6/6/2012	MW-124 5/2/2013	MW-129 6/6/2012	MW-129 5/1/2013	MW-130 6/5/2012	MW-130 5/1/2013	P-19 11/4/2008	P-19 4/7/2009	P-20 3/31/1987
1,1,1-Trichloroethane	ug/l	2300	13000	0.29 U	0.29 U	0.29 U	57 U	57 U	0.29 U	0.29 U	0.29 U	0.29 U	0.25 U	0.25 U	---
1,1,2,2-Tetrachloroethane	ug/l	4	6	0.20 U	0.2 U	0.2 U	40 U	40 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15 U	0.15 U	---
1,1,2-Trichloroethane	ug/l	5	8	0.20 U	0.2 U	0.2 U	40 U	40 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	---
1,1-Dichloroethane	ug/l	3600	50	0.12 U	0.12 U	0.12 U	23 U	23 U	0.12 U	0.12 U	0.12 U	0.12 U	0.24 U	0.24 U	---
1,1-Dichloroethylene	ug/l	250	260	0.30 U	0.3 U	0.3 U	59 U	59 U	0.3 U	0.3 U	0.3 U	0.3 U	0.28 U	0.28 U	---
1,2-Dichloroethane	ug/l	2	3	0.21 U	0.21 U	0.21 U	42 U	42 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	---
1,2-Dichloropropane	ug/l	1	4	0.095 U	0.095 U	0.095 U	19 U	19 U	0.095 U	0.095 U	0.095 U	0.095 U	0.18 U	0.18 U	---
2-Butanone	ug/l	2700000	2500000	0.55 U	0.55 U	0.99 J	110 U	110 U	0.55 U	0.55 U	0.55 U	0.55 U	0.5 U	0.50 U	---
2-Hexanone	ug/l			0.16 U	0.16 U	0.16 U	32 U	32 U	0.16 U	0.16 U	0.16 U	0.16 U	0.53 U	0.53 U	---
4-Methyl-2-pentanone	ug/l	880000	900000	0.53 U	0.53 U	0.53 U	110 U	110 U	0.53 U	0.53 U	0.53 U	0.53 U	0.23 U	0.23 U	---
Acetone	ug/l	1900000	21000000	2.5 J	3.5 J	6.1	500 U	500 U	2.7 J	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	---
Benzene	ug/l	15	20	0.11 U	0.11 U	0.11 U	2300	2100	0.14 J	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U	---
Bromodichloromethane	ug/l	5	2	0.13 U	0.13 U	0.13 U	26 U	26 U	0.13 U	0.13 U	0.13 U	0.13 U	0.2 U	0.20 U	---
Bromoform	ug/l	370	300	0.19 U	0.19 U	0.19 U	38 U	38 U	0.19 U	0.19 U	0.19 U	0.19 U	0.25 U	0.25 U	---
Bromomethane	ug/l	29	20	0.31 U	0.31 U	0.31 U	63 U	63 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.30 U	---
Carbon disulfide	ug/l	710	1500	0.21 U	0.21 U	0.21 U	42 U	42 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.20 U	---
Carbon Tetrachloride	ug/l	1	1	0.14 U	0.14 U	0.14 U	27 U	27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.3 U	0.30 U	---
Chlorobenzene	ug/l	640	770	0.14 U	0.14 U	0.14 U	27 U	27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.23 U	0.23 U	---
Chloroethane	ug/l	4	26000	0.21 U	0.21 U	0.21 U	43 U	43 U	0.21 U	0.21 U	0.21 U	0.21 U	0.25 U	0.25 U	---
Chloroform	ug/l	70	70	0.17 U	0.17 U	0.17 U	34 U	34 U	0.17 U	0.17 U	0.17 U	0.17 U	0.24 U	0.24 U	---
Chloromethane	ug/l	240	240	0.28 U	0.28 U	0.28 U	57 U	57 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.27 U	---
cis-1,2-Dichloroethylene	ug/l			0.24 U	0.24 U	0.19 U	47 U	47 U	0.24 U	0.19 U	0.24 U	0.19 U	0.27 U	0.27 U	---
cis-1,3-Dichloropropene	ug/l			0.19 U	0.19 U	0.24 U	37 U	37 U	0.19 U	0.24 U	0.19 U	0.24 U	0.19 U	0.19 U	---
Dibromochloromethane	ug/l	9	6	0.14 U	0.14 U	0.14 U	27 U	27 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	---
Ethylbenzene	ug/l	61000	700	0.23 U	0.23 U	0.23 U	480	440	0.23 U	0.23 U	0.23 U	0.23 U	0.18 U	0.18 U	---
Methylene chloride	ug/l	53	920	0.15 U	0.15 U	0.13 U	66 J	140 J	0.15 U	0.13 U	0.15 U	0.13 U	0.32 U	0.32 U	---
Styrene	ug/l	18000	180000	0.097 U	0.097 U	0.097 U	19 U	19 U	0.097 U	0.097 U	0.097 U	0.097 U	0.22 U	0.22 U	---
Tetrachloroethylene	ug/l	1	31	0.15 U	0.15 U	0.15 U	30 U	30 U	0.15 U	0.15 U	0.15 U	0.15 U	0.24 U	0.24 U	---
Toluene	ug/l	310000	330000	0.15 U	0.15 U	0.15 U	350	260	0.15 U	0.15 U	0.15 U	0.15 U	0.23 U	0.23 U	---
trans-1,2-Dichloroethene	ug/l	300	520	0.17 U	0.17 U	0.17 U	34 U	34 U	0.17 U	0.17 U	0.17 U	0.17 U	0.27 U	0.27 U	---
Trans-1,3-Dichloropropene	ug/l			0.15 U	0.15 U	0.15 U	30 U	30 U	0.15 U	0.15 U	0.15 U	0.15 U	0.18 U	0.18 U	---
Trichloroethylene	ug/l	1	2	0.14 U	0.14 U	0.14 U	29 U	29 U	0.14 U	0.14 U	0.14 U	0.14 U	0.29 U	0.29 U	---
Vinyl chloride	ug/l	1	1	0.23 U	0.23 U	0.23 U	45 U	45 U	0.23 U	0.23 U	0.23 U	0.23 U	0.29 U	0.29 U	---
Xylene (total)	ug/l	7000	8600	0.49 U	0.49 U	0.49 U	620	580 J	0.49 U	0.62 J	0.49 U	0.49 U	0.62 U	0.62 U	---
1,2,4-Trichlorobenzene	ug/l	2800	130	0.27 U	0.27 U	0.27 U	54 U	54 U	0.27 U	0.27 U	0.27 U	0.27 U	0.15 U	0.15 U	<1900000
1,2-Dichlorobenzene	ug/l	5900	6800	0.15 U	0.15 U	0.15 U	30 U	60 U	0.15 U	0.15 U	0.15 U	0.15 U	0.22 U	0.22 U	<1900000
1,3-Dichlorobenzene	ug/l			0.11 U	0.11 U	0.11 U	21 U	21 U	0.11 U	0.11 U	0.11 U	0.11 U	0.16 U	0.16 U	<1900000
1,4-Dichlorobenzene	ug/l	75	75	0.21 U	0.21 U	0.21 U	41 U	41 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U	0.18 U	<1900000
2,4,5-Trichlorophenol	ug/l			0.014 U	0.15 U	0.15 U	30 U	74 U	0.15 U	0.15 U	0.15 U	0.15 U	0.016 U	0.015 U	<9600000
2,4,6-Trichlorophenol	ug/l			0.0086 U	0.17 U	0.17 U	34 U	85 U	0.17 U	0.17 U	0.17 U	0.17 U	0.0098 U	0.0088 U	<1900000
2,4-Dichlorophenol	ug/l			0.013 U	0.033 U	0.033 U	6.5 U	16 U	0.032 U	0.032 U	0.033 U	0.033 U	0.015 U	0.013 U	<1900000
2,4-Dimethylphenol	ug/l			0.0076 U	0.085 U	0.085 U	2100	2700	0.083 U	0.083 U	0.085 U	0.084 U	0.0086 U	0.0078 U	440000 J
2,4-Dinitrophenol	ug/l			0.58 U	0.61 U	0.61 U	120 U	300 U	0.6 U	0.6 U	0.61 U	0.6 U	0.66 U	0.60 U	<9600000
2,4-Dinitrotoluene	ug/l			0.016 U	0.054 U	0.054 U	10 U	26 U	0.052 U	0.052 U	0.054 U	0.053 U	0.018 U	0.016 U	<1900000
2-Chloronaphthalene	ug/l			0.014 U	0.015 U	0.015 U	2.9 U	7.3 U	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	<1900000
2-Chlorophenol	ug/l			0.020 U	0.17 U	0.17 U	32 U	80 U	0.16 U	0.16 U	0.17 U	0.16 U	0.023 U	0.020 U	<1900000
2-Methylnaphthalene	ug/l			0.036 J	0.012 U	0.012 U	280	370	0.023 J	0.013 J	0.012 U	0.012 U	0.036 J	0.11 J	22000000
2-Methylphenol	ug/l			0.013 U	0.086 U	0.086 U	830	870	0.084 U	0.084 U	0.086 U	0.085 U	0.015 U	0.014 U	230000 J
2-Nitroaniline	ug/l			0.016 U	0.35 U	0.35 U	68 U	170 U	0.34 U	0.34 U	0.35 U	0.34 U	0.018 U	0.016 U	<9600000

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-123 10/13/2009	MW-123R 6/5/2012	MW-123R 5/1/2013	MW-124 6/6/2012	MW-124 5/2/2013	MW-129 6/6/2012	MW-129 5/1/2013	MW-130 6/5/2012	MW-130 5/1/2013	P-19 11/4/2008	P-19 4/7/2009	P-20 3/31/1987
2-Nitrophenol	ug/l			0.013 U	0.17 U	0.17 U	33 U	83 U	0.17 U	0.17 U	0.17 U	0.17 U	0.015 U	0.014 U	<1900000
3,3-Dichlorobenzidine	ug/l			0.034 U	0.11 U	0.11 U	22 U	54 U	0.11 U	0.11 U	0.11 U	0.11 U	0.039 U	0.035 U	<3800000
3-Nitroaniline	ug/l			0.025 U	0.32 U	0.32 U	62 U	160 U	0.31 U	0.31 U	0.32 U	0.32 U	0.028 U	0.025 U	<9600000
4,6-Dinitro-2-methylphenol	ug/l			0.74 U	0.22 U	0.22 U	43 U	110 U	0.21 U	0.21 U	0.22 U	0.22 U	0.84 U	0.76 U	<9600000
4-Bromophenylphenyl ether	ug/l			0.018 U	0.064 U	0.064 U	12 U	31 U	0.062 U	0.061 U	0.064 U	0.062 U	0.02 U	0.018 U	<1900000
4-Chloro-3-methylphenol	ug/l			0.024 U	0.075 U	0.075 U	15 U	37 U	0.073 U	0.073 U	0.075 U	0.074 U	0.027 U	0.025 U	<1900000
4-Chloroaniline	ug/l			0.10 U	0.089 U	0.089 U	17 U	43 U	0.086 U	0.086 U	0.089 U	0.087 U	0.12 U	0.11 U	<1900000
4-Chlorophenyl phenyl ether	ug/l			0.0099 U	0.05 U	0.05 U	9.8 U	24 U	0.049 U	0.049 U	0.05 U	0.049 U	0.011 U	0.010 U	<1900000
4-Methylphenol	ug/l			0.017 U	---	0.09 U	---	490	0.088 U	0.088 U	0.09 U	0.088 U	0.019 U	0.017 U	<1900000
4-Nitroaniline	ug/l			0.022 U	0.17 U	0.17 U	33 U	84 U	0.17 U	0.17 U	0.17 U	0.17 U	0.025 U	0.022 U	<9600000
4-Nitrophenol	ug/l			0.67 U	0.65 U	0.65 U	130 U	310 U	0.63 U	0.63 U	0.65 U	0.63 U	0.42 U	0.68 U	<9600000
Acenaphthene	ug/l			0.014 U	0.014 U	0.014 U	140	210	0.82	0.33	3.3	3.3	0.064 J	0.014 U	19000000
Acenaphthylene	ug/l			0.059 J	0.015 U	0.036 J	3 U	7.4 U	0.015 U	0.08 J	0.015 U	0.049 J	0.061 J	0.11 J	1000000 J
Anthracene	ug/l			0.29	0.79	0.089 J	29 U	7.5 U	0.23	0.23	0.22	0.19 J	0.31	0.42	15000000
Benzo(a)anthracene	ug/l			0.11 J	0.015 U	0.015 U	2.9 U	7.1 U	0.014 U	0.014 U	0.015 U	0.014 U	0.075 J	1.2	4500000
Benzo(a)pyrene	ug/l			0.10 J	0.013 U	0.014 U	2.6 U	6.5 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.99	2900000
Benzo(b)fluoranthene	ug/l			0.17 J	0.016 U	0.016 U	3 U	7.6 U	0.015 U	0.015 U	0.016 U	0.015 U	0.06 J	1.8	6200000
Benzo(ghi)perylene	ug/l			0.078 J	0.015 U	0.015 U	2.9 U	7.3 U	0.015 U	0.015 U	0.015 U	0.015 U	0.016 U	0.79	1300000 J
Benzo(k)fluoranthene	ug/l			0.016 U	0.055 U	0.055 U	11 U	27 U	0.053 U	0.053 U	0.055 U	0.054 U	0.091 J	0.016 U	6200000
Bis(2-chloroethoxy)methane	ug/l			0.013 U	0.058 U	0.058 U	11 U	28 U	0.056 U	0.056 U	0.058 U	0.057 U	0.015 U	0.013 U	<1900000
Bis(2-chloroethyl)ether	ug/l			0.025 U	0.025 U	0.025 U	4.9 U	12 U	0.024 U	0.024 U	0.025 U	0.025 U	0.029 U	0.026 U	<1900000
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			0.25 JB	1.3 U	1.3 U	240 U	610 U	1.2 U	1.2 U	1.3 U	1.2 U	0.28 J	0.045 U	<1900000
Butyl benzyl phthalate	ug/l			0.29 U	0.2 JB	0.14 U	28 U	69 U	0.14 U	0.14 U	0.14 JB	0.14 U	0.61 J	0.30 U	<1900000
Carbazole	ug/l			0.013 U	0.016 U	0.016 U	110	120	0.015 U	0.015 U	0.016 U	0.024 J	0.015 U	0.21	---
Chrysene	ug/l			0.095 J	0.014 U	0.014 U	2.7 U	6.8 U	0.014 U	0.014 U	0.014 U	0.014 U	0.071 J	1.1	4000000
Dibenzo(a,h)anthracene	ug/l			0.012 U	0.016 U	0.016 U	3 U	7.5 U	0.015 U	0.015 U	0.016 U	0.015 U	0.014 U	0.22	730000 J
Dibenzofuran	ug/l			0.018 U	0.062 U	0.062 U	70 J	84 J	0.06 U	0.06 U	0.062 U	0.06 U	0.1 J	0.17 J	12000000
Diethyl phthalate	ug/l			0.043 U	0.15 U	0.15 U	28 U	71 U	0.14 J	0.14 U	0.15 U	0.14 U	0.13 J	0.044 U	<1900000
Dimethyl phthalate	ug/l			0.013 U	0.077 U	0.077 U	15 U	37 U	0.074 U	0.074 U	0.077 U	0.075 U	0.015 U	0.014 U	<1900000
Di-n-butyl phthalate	ug/l			0.028 U	0.12 U	0.12 U	24 U	61 U	0.12 U	0.12 U	0.12 U	0.12 U	0.032 U	0.029 U	330000 J
Di-n-octyl phthalate	ug/l			0.015 U	0.21 U	0.21 U	40 U	100 U	0.2 U	0.2 U	0.21 U	0.2 U	0.017 U	0.015 U	<1900000
Fluoranthene	ug/l			0.22	0.016 U	0.026 J	12 J	7.9 U	0.082 J	0.016 U	0.15 J	0.091 J	0.12 J	2.1	15000000
Fluorene	ug/l			0.0094 U	0.022 U	0.022 U	44	54 J	0.021 U	0.021 U	0.094 J	0.1 J	0.091 J	0.0096 U	14000000
Hexachlorobenzene	ug/l			0.017 U	0.018 U	0.018 U	3.6 U	8.9 U	0.018 U	0.018 U	0.018 U	0.018 U	0.02 U	0.018 U	<1900000
Hexachlorobutadiene	ug/l	1	1	0.011 U	0.017 U	0.017 U	3.2 U	8.1 U	0.016 U	0.016 U	0.017 U	0.016 U	0.013 U	0.012 U	<1900000
Hexachlorocyclopentadiene	ug/l			0.011 U	0.052 U	0.052 U	10 U	25 U	0.05 U	0.05 U	0.052 U	0.051 U	0.012 U	0.011 U	<1900000
Hexachloroethane	ug/l			0.0073 U	0.063 U	0.063 U	12 U	30 U	0.061 U	0.061 U	0.063 U	0.062 U	0.0083 U	0.0075 U	<1900000
Indeno(1,2,3-cd)pyrene	ug/l			0.075 J	0.02 U	0.02 U	3.9 U	9.7 U	0.019 U	0.019 U	0.02 U	0.02 U	0.017 U	0.65	1200000
Isophorone	ug/l			0.027 U	0.064 U	0.064 U	13 U	31 U	0.063 U	0.063 U	0.064 U	0.063 U	0.031 U	0.028 U	<1900000
Naphthalene	ug/l	---	300	0.35	0.014 U	0.014 U	8400	8600	0.096 JB	0.11 J	0.014 U	0.014 U	0.061 J	0.27	58000000
Nitrobenzene	ug/l			0.017 U	0.084 U	0.084 U	16 U	41 U	0.082 U	0.082 U	0.084 U	0.083 U	0.019 U	0.017 U	<1900000
N-Nitrosodiphenylamine	ug/l			0.046 U	0.085 U	0.085 U	17 U	41 U	0.083 U	0.083 U	0.085 U	0.084 U	0.015 U	0.047 U	<1900000
N-Nitrosodipropylamine	ug/l			0.037 U	0.031 U	0.031 U	6 U	15 U	0.03 U	0.03 U	0.031 U	0.03 U	0.042 U	0.037 U	<1900000
Pentachlorophenol	ug/l			0.18 U	0.066 U	0.066 U	13 U	32 U	0.064 U	0.064 U	0.066 U	0.065 U	0.2 U	0.18 U	<9600000
Phenanthrene	ug/l			0.027 U	0.043 U	0.043 U	55	59 J	0.043 J	0.059 J	0.3	0.24	0.33	0.88	<130000000
Phenol	ug/l			0.023 U	0.058 U	0.058 U	550	420	0.056 U	0.056 U	0.058 U	0.057 U	0.026 U	0.023 U	<1900000
Pyrene	ug/l			0.2	0.016 U	0.022 J	7.1 J	7.6 U	0.15 J	0.15 J	0.1 J	0.045 J	0.21 J	1.9	14000000

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	P-22 3/27/1987	P-24 6/6/2012	P-24 5/2/2013	P-25A 6/5/2012	P-25A 4/30/2013	PZ-01 6/6/2012	PZ-01 10/24/2012	PZ-01 4/30/2013	PZ-04 6/7/2012	PZ-04 10/24/2012	PZ-04 5/2/2013	SWW-25 11/4/2008
1,1,1-Trichloroethane	ug/l	2300	13000	---	5.7 U	7.2 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	14 U	14 U	3.6 U	0.25 U
1,1,2,2-Tetrachloroethane	ug/l	4	6	---	4 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	10 U	10 U	2.5 U	0.15 U
1,1,2-Trichloroethane	ug/l	5	8	---	4 U	5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	10 U	10 U	2.5 U	0.2 U
1,1-Dichloroethane	ug/l	3600	50	---	2.3 U	2.9 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	5.8 U	5.8 U	1.5 U	0.24 U
1,1-Dichloroethylene	ug/l	250	260	---	5.9 U	7.4 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	15 U	15 U	3.7 U	0.28 U
1,2-Dichloroethane	ug/l	2	3	---	4.2 U	5.3 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	11 U	2.6 U	0.21 U
1,2-Dichloropropane	ug/l	1	4	---	1.9 U	2.4 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	4.7 U	4.7 U	1.2 U	0.18 U
2-Butanone	ug/l	2700000	2500000	---	11 U	14 U	0.55 U	0.55 U	0.55 U	0.61 J	0.55 U	27 U	27 U	6.8 U	0.5 U
2-Hexanone	ug/l			---	3.2 U	4 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	8 U	8 U	2 U	0.53 U
4-Methyl-2-pentanone	ug/l	880000	900000	---	11 U	13 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	26 U	26 U	6.6 U	0.23 U
Acetone	ug/l	1900000	21000000	---	50 U	63 U	2.5 U	2.5 U	2.5 U	2.5 U	2.9 J	130 U	130 U	31 U	2.5 U
Benzene	ug/l	15	20	---	290	380	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	120	95	230	0.27 U
Bromodichloromethane	ug/l	5	2	---	2.6 U	3.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	6.5 U	6.5 U	1.6 U	0.2 U
Bromoform	ug/l	370	300	---	3.8 U	4.8 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	9.6 U	9.6 U	2.4 U	0.25 U
Bromomethane	ug/l	29	20	---	6.3 U	7.8 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	16 U	16 U	3.9 U	0.3 U
Carbon disulfide	ug/l	710	1500	---	11 J	5.3 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	11 U	11 J	0.2 U
Carbon Tetrachloride	ug/l	1	1	---	2.7 U	3.4 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	6.8 U	6.8 U	1.7 U	0.3 U
Chlorobenzene	ug/l	640	770	---	2.7 U	3.4 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	6.8 U	6.8 U	1.7 U	0.23 U
Chloroethane	ug/l	4	26000	---	4.3 U	5.4 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	11 U	2.7 U	0.25 U
Chloroform	ug/l	70	70	---	3.4 U	4.3 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	8.5 U	8.5 U	2.1 U	0.24 U
Chloromethane	ug/l	240	240	---	5.7 U	7.1 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	14 U	14 U	3.5 U	0.27 U
cis-1,2-Dichloroethylene	ug/l			---	4.7 U	5.9 U	0.24 U	0.19 U	0.24 U	0.24 U	0.19 U	12 U	12 U	3 U	0.27 U
cis-1,3-Dichloropropene	ug/l			---	3.7 U	4.7 U	0.19 U	0.24 U	0.19 U	0.19 U	0.24 U	9.3 U	9.3 U	2.3 U	0.19 U
Dibromochloromethane	ug/l	9	6	---	2.7 U	3.4 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	6.8 U	6.8 U	1.7 U	0.16 U
Ethylbenzene	ug/l	61000	700	---	100	170	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	62	68	80	0.18 U
Methylene chloride	ug/l	53	920	---	8.6 J	22 JB	0.15 U	0.38 U	0.15 U	0.15 U	0.35 U	47 J	13 J	4.5 JB	0.32 U
Styrene	ug/l	18000	180000	---	1.9 U	2.4 U	0.097 U	0.097 U	0.097 U	0.097 U	0.097 U	4.8 U	4.8 U	1.2 U	0.22 U
Tetrachloroethylene	ug/l	1	31	---	3 U	3.7 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	7.4 U	7.4 U	1.9 U	0.24 U
Toluene	ug/l	310000	330000	---	3 U	19 J	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	18 J	15 J	51	0.23 U
trans-1,2-Dichloroethene	ug/l	300	520	---	3.4 U	4.2 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	8.5 U	8.5 U	2.1 U	0.27 U
Trans-1,3-Dichloropropene	ug/l			---	3 U	3.7 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	7.4 U	7.4 U	1.9 U	0.18 U
Trichloroethylene	ug/l	1	2	---	2.9 U	3.6 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	7.2 U	7.2 U	1.8 U	0.29 U
Vinyl chloride	ug/l	1	1	---	4.5 U	5.7 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	11 U	11 U	2.8 U	0.29 U
Xylene (total)	ug/l	7000	8600	---	9.8 U	70 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	55 J	49 J	44	0.62 U
1,2,4-Trichlorobenzene	ug/l	2800	130	<20	5.4 U	6.8 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	14 U	14 U	3.4 U	0.15 U
1,2-Dichlorobenzene	ug/l	5900	6800	<20	3 U	3.8 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	7.6 U	7.6 U	1.9 U	0.22 U
1,3-Dichlorobenzene	ug/l			<20	2.1 U	2.6 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	5.3 U	5.3 U	1.3 U	0.16 U
1,4-Dichlorobenzene	ug/l	75	75	<20	4.1 U	5.2 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	10 U	10 U	2.6 U	0.18 U
2,4,5-Trichlorophenol	ug/l			<100	3 U	3 U	0.15 U	0.15 U	0.15 U	0.16 U	0.15 U	1.5 U	0.16 U	0.15 U	0.015 U
2,4,6-Trichlorophenol	ug/l			<20	3.4 U	3.4 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U	1.7 U	0.18 U	0.17 U	0.0087 U
2,4-Dichlorophenol	ug/l			<20	0.65 U	0.65 U	0.033 U	0.033 U	0.032 U	0.035 U	0.032 U	0.33 U	0.035 U	0.032 U	0.013 U
2,4-Dimethylphenol	ug/l			<20	1.7 U	1.7 U	0.084 U	0.084 U	0.081 U	0.09 U	0.082 U	12	11	47	0.0077 U
2,4-Dinitrophenol	ug/l			<100	12 U	12 U	0.6 U	0.61 U	0.58 U	0.65 U	0.59 U	6.1 U	0.64 U	0.58 U	0.59 U
2,4-Dinitrotoluene	ug/l			<20	1 U	1.1 U	0.053 U	0.053 U	0.051 U	0.056 U	0.052 U	0.53 U	0.056 U	0.051 U	0.016 U
2-Chloronaphthalene	ug/l			<20	0.29 U	0.3 U	0.015 U	0.015 U	0.014 U	0.016 U	0.015 U	0.15 U	0.016 U	0.014 U	0.014 U
2-Chlorophenol	ug/l			<20	3.2 U	3.2 U	0.16 U	0.16 U	0.16 U	0.17 U	0.016 U	1.6 U	0.17 U	0.16 U	0.02 U
2-Methylnaphthalene	ug/l			51	0.77 J	69	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	10	8.4	7.7	0.036 J
2-Methylphenol	ug/l			<20	1.7 U	1.7 U	0.085 U	0.085 U	0.082 U	0.091 U	0.083 U	3.2 J	2.5	19	0.013 U
2-Nitroaniline	ug/l			<100	6.8 U	6.9 U	0.34 U	0.35 U	0.33 U	0.37 U	0.34 U	3.5 U	0.37 U	0.33 U	0.016 U

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall

Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	P-22 3/27/1987	P-24 6/6/2012	P-24 5/2/2013	P-25A 6/5/2012	P-25A 4/30/2013	PZ-01 6/6/2012	PZ-01 10/24/2012	PZ-01 4/30/2013	PZ-04 6/7/2012	PZ-04 10/24/2012	PZ-04 5/2/2013	SWW-25 11/4/2008
2-Nitrophenol	ug/l			<20	3.3 U	3.3 U	0.17 U	0.17 U	0.16 U	0.18 U	0.16 U	1.7 U	0.18 U	0.16 U	0.013 U
3,3-Dichlorobenzidine	ug/l			<40	2.2 U	2.2 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 U	1.1 U	0.12 U	0.11 U	0.035 U
3-Nitroaniline	ug/l			<100	6.2 U	6.3 U	0.32 U	0.32 U	0.31 U	0.34 U	0.31 U	3.2 U	0.33 U	0.31 U	0.025 U
4,6-Dinitro-2-methylphenol	ug/l			<100	4.3 U	4.3 U	0.22 U	0.22 U	0.21 U	0.23 U	0.21 U	2.2 U	0.23 U	0.21 U	0.75 U
4-Bromophenylphenyl ether	ug/l			<20	1.2 U	1.2 U	0.062 U	0.063 U	0.06 U	0.067 U	0.061 U	0.63 U	0.066 U	0.06 U	0.018 U
4-Chloro-3-methylphenol	ug/l			<20	1.5 U	1.5 U	0.074 U	0.075 U	0.072 U	0.079 U	0.073 U	0.75 U	0.079 U	0.072 U	0.024 U
4-Chloroaniline	ug/l			<20	1.7 U	1.7 U	0.087 U	0.088 U	0.084 U	0.093 U	0.085 U	0.88 U	0.092 U	0.084 U	0.15 J
4-Chlorophenyl phenyl ether	ug/l			<20	0.98 U	0.99 U	0.049 U	0.05 U	0.048 U	0.053 U	0.048 U	0.5 U	0.052 U	0.048 U	0.01 U
4-Methylphenol	ug/l			<20	---	1.8 U	---	0.27 J	---	---	0.96 U	---	---	9.2	0.14 J
4-Nitroaniline	ug/l			<100	3.3 U	3.4 U	0.17 U	0.17 U	0.16 U	0.18 U	0.17 U	1.7 U	0.18 U	0.16 U	0.022 U
4-Nitrophenol	ug/l			<100	13 U	13 U	0.63 U	0.64 U	0.62 U	0.68 U	0.62 U	6.4 U	0.67 U	0.62 U	0.38 U
Acenaphthene	ug/l			160	75	69	0.014 U	0.014 U	0.014 U	0.085 J	0.014 U	60	78	89	0.086 J
Acenaphthylene	ug/l			6.6 J	4.9	6.2	0.015 U	0.015 U	0.014 U	0.029 J	0.015 U	4.1	3	5	0.11 J
Anthracene	ug/l			18 J	2.9 U	1.6 J	0.15 U	0.048 J	0.14 U	0.16 U	0.21	7.3	9.4	11	0.21
Benzo(a)anthracene	ug/l			<20	0.29 U	0.29 U	0.014 U	0.015 U	0.014 U	0.015 U	0.014 U	0.87 J	0.51	1.1	0.093 J
Benzo(a)pyrene	ug/l			<20	0.26 U	0.26 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U	0.55 J	0.12 J	0.56	0.011 U
Benzo(b)fluoranthene	ug/l			<20	0.3 U	0.31 U	0.015 U	0.016 U	0.015 U	0.017 U	0.015 U	6.4	0.11 J	0.57	0.082 J
Benzo(ghi)perylene	ug/l			<20	0.29 U	0.3 U	0.015 U	0.015 U	0.014 U	0.016 U	0.015 U	0.15 U	0.064 J	0.29	0.014 U
Benzo(k)fluoranthene	ug/l			<20	1.1 U	1.1 U	0.054 U	0.054 U	0.052 U	0.058 U	0.053 U	0.54 U	0.084 J	0.22	0.053 J
Bis(2-chloroethoxy)methane	ug/l			<20	1.1 U	1.1 U	0.057 U	0.058 U	0.055 U	0.061 U	0.056 U	0.58 U	0.061 U	0.95 U	0.013 U
Bis(2-chloroethyl)ether	ug/l			<20	0.49 U	0.49 U	0.025 U	0.025 U	0.024 U	0.026 U	0.024 U	0.25 U	0.026 U	0.055 U	0.025 U
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			<20	24 U	25 U	1.2 U	1.2 U	1.2 U	1.3 U	1.2 U	12 U	1.3 U	0.024 U	0.18 J
Butyl benzyl phthalate	ug/l			<20	2.8 U	2.8 U	0.14 U	0.51 J	0.14 U	0.15 U	0.56 J	1.4 U	0.15 U	1.2 U	0.37 J
Carbazole	ug/l			---	7.7	0.31 U	0.015 U	0.045 J	0.015 U	0.017 U	0.015 U	51	84	81	0.013 U
Chrysene	ug/l			<20	0.27 U	0.27 U	0.014 U	0.014 U	0.013 U	0.015 U	0.013 U	0.65 J	0.33	0.82	0.09 J
Dibenzo(a,h)anthracene	ug/l			<20	0.3 U	0.3 U	0.015 U	0.015 U	0.015 U	0.016 U	0.015 U	0.15 U	0.016 U	0.072 J	0.012 U
Dibenzofuran	ug/l			47	31	26	0.06 U	0.061 U	0.059 U	0.065 U	0.059 U	53	63	67	0.098 J
Diethyl phthalate	ug/l			<20	2.8 U	2.9 U	0.14 U	0.54 J	0.14 U	0.15 U	0.14 U	1.4 U	0.15 U	0.14 U	0.13 J
Dimethyl phthalate	ug/l			<20	1.5 U	1.5 U	0.075 U	0.076 U	0.073 U	0.081 U	0.074 U	0.76 U	0.08 U	0.073 U	0.013 U
Di-n-butyl phthalate	ug/l			<20	2.4 U	2.4 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	1.2 U	0.13 U	0.12 U	0.17 J
Di-n-octyl phthalate	ug/l			<20	4 U	4.1 U	0.2 U	0.2 U	0.2 U	0.22 U	0.2 U	2 U	0.22 U	0.2 U	0.034 J
Fluoranthene	ug/l			16 J	1.4 J	0.8 J	0.016 U	0.062 J	0.052 J	0.061 J	0.064 J	7.4	14	11	0.12 J
Fluorene	ug/l			77	1.5 J	5.7	0.021 U	0.021 U	0.035 J	0.023 U	0.021 U	43	69	38	0.091 J
Hexachlorobenzene	ug/l			<20	0.36 U	0.36 U	0.018 U	0.018 U	0.017 U	0.019 U	0.018 U	0.18 U	0.019 U	0.017 U	0.017 U
Hexachlorobutadiene	ug/l	1	1	<20	0.32 U	0.33 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U	0.16 U	0.017 U	0.016 U	0.012 U
Hexachlorocyclopentadiene	ug/l			<20	1 U	1 U	0.051 U	0.051 U	0.049 U	0.055 U	0.05 U	0.51 U	0.054 U	0.049 U	0.011 U
Hexachloroethane	ug/l			<20	1.2 U	1.2 U	0.062 U	0.062 U	0.06 U	0.066 U	0.06 U	0.62 U	0.065 U	0.06 U	0.0074 U
Indeno(1,2,3-cd)pyrene	ug/l			<20	0.39 U	0.39 U	0.02 U	0.02 U	0.019 U	0.021 U	0.019 U	0.2 U	0.068 J	0.23	0.015 U
Isophorone	ug/l			<20	1.3 U	1.3 U	0.063 U	0.064 U	0.061 U	0.068 U	0.062 U	0.64 U	0.067 U	0.061 U	0.028 U
Naphthalene	ug/l	---	300	240	80	1500	0.014 U	0.014 U	0.094 JB	0.053 JB	0.021 J	390	920	410	0.089 J
Nitrobenzene	ug/l			<20	1.6 U	1.7 U	0.083 U	0.083 U	0.08 U	0.089 U	0.081 U	0.83 U	0.088 U	0.08 U	0.017 U
N-Nitrosodiphenylamine	ug/l			<20	1.7 U	1.7 U	0.084 U	0.084 U	0.081 U	0.09 U	0.082 U	0.84 U	0.089 U	0.081 U	0.013 U
N-Nitrosodipropylamine	ug/l			<20	0.6 U	0.6 U	0.03 U	0.03 U	0.029 U	0.032 U	0.03 U	0.3 U	0.032 U	0.029 U	0.037 U
Pentachlorophenol	ug/l			<100	1.3 U	1.3 U	0.065 U	0.066 U	0.063 U	0.07 U	0.064 U	0.66 U	0.069 U	0.063 U	0.18 U
Phenanthrene	ug/l			<95	3.7 J	3.2 J	0.044 J	0.042 U	0.061 J	0.072 J	0.041 U	61	90	81	0.27
Phenol	ug/l			4.4 J	1.1 U	1.1 U	0.057 U	0.14 J	0.055 U	0.061 U	0.056 U	1.5 J	0.061 U	4.2	0.1 J
Pyrene	ug/l			16 J	1.2 J	0.61 J	0.015 U	0.052 J	0.063 J	0.075 J	0.044 J	7.3	9.8	8.8	0.2

Table 1
Koppers Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	SWW-25 4/7/2009	W-9 3/26/1987	W-12R 6/5/2012	W-12R 10/23/2012	W-12R 5/1/2013	W-27 3/27/1987
1,1,1-Trichloroethane	ug/l	2300	13000	0.25 U	---	0.29 U	0.29 U	0.29 U	---
1,1,2,2-Tetrachloroethane	ug/l	4	6	0.15 U	---	0.2 U	0.2 U	0.2 U	---
1,1,2-Trichloroethane	ug/l	5	8	0.20 U	---	0.2 U	0.2 U	0.2 U	---
1,1-Dichloroethane	ug/l	3600	50	0.24 U	---	0.12 U	0.12 U	0.12 U	---
1,1-Dichloroethylene	ug/l	250	260	0.28 U	---	0.3 U	0.3 U	0.3 U	---
1,2-Dichloroethane	ug/l	2	3	0.21 U	---	0.21 U	0.21 U	0.21 U	---
1,2-Dichloropropane	ug/l	1	4	0.18 U	---	0.095 U	0.095 U	0.095 U	---
2-Butanone	ug/l	2700000	2500000	0.50 U	---	0.55 U	0.55 U	0.55 U	---
2-Hexanone	ug/l			0.53 U	---	0.16 U	0.16 U	0.16 U	---
4-Methyl-2-pentanone	ug/l	880000	900000	0.23 U	---	0.53 U	0.53 U	0.53 U	---
Acetone	ug/l	1900000	21000000	2.5 U	---	2.5 U	2.5 U	2.5 U	---
Benzene	ug/l	15	20	1.8	---	0.11 U	0.11 U	0.11 U	---
Bromodichloromethane	ug/l	5	2	0.20 U	---	0.13 U	0.13 U	0.13 U	---
Bromoform	ug/l	370	300	0.25 U	---	0.19 U	0.19 U	0.19 U	---
Bromomethane	ug/l	29	20	0.30 U	---	0.31 U	0.31 U	0.31 U	---
Carbon disulfide	ug/l	710	1500	0.20 U	---	0.21 U	0.21 U	0.22 J	---
Carbon Tetrachloride	ug/l	1	1	0.30 U	---	0.14 U	0.14 U	0.14 U	---
Chlorobenzene	ug/l	640	770	0.23 U	---	0.14 U	0.14 U	0.14 U	---
Chloroethane	ug/l	4	26000	0.25 U	---	0.21 U	0.21 U	0.21 U	---
Chloroform	ug/l	70	70	0.24 U	---	0.17 U	0.17 U	0.17 U	---
Chloromethane	ug/l	240	240	0.27 U	---	0.28 U	0.28 U	0.28 U	---
cis-1,2-Dichloroethylene	ug/l			0.27 U	---	1	1.3	0.71 J	---
cis-1,3-Dichloropropene	ug/l			0.19 U	---	0.19 U	0.19 U	0.24 U	---
Dibromochloromethane	ug/l	9	6	0.16 U	---	0.14 U	0.14 U	0.14 U	---
Ethylbenzene	ug/l	61000	700	0.18 U	---	0.23 U	0.23 U	0.23 U	---
Methylene chloride	ug/l	53	920	0.32 U	---	0.15 U	0.15 U	0.13 U	---
Styrene	ug/l	18000	180000	0.22 U	---	0.097 U	0.097 U	0.097 U	---
Tetrachloroethylene	ug/l	1	31	0.24 U	---	0.15 U	0.15 U	0.15 U	---
Toluene	ug/l	310000	330000	0.23 U	---	0.15 U	0.15 U	0.15 U	---
trans-1,2-Dichloroethene	ug/l	300	520	0.27 U	---	0.17 U	0.17 U	0.17 U	---
Trans-1,3-Dichloropropene	ug/l			0.18 U	---	0.15 U	0.15 U	0.15 U	---
Trichloroethylene	ug/l	1	2	0.29 U	---	0.14 U	0.14 U	0.14 U	---
Vinyl chloride	ug/l	1	1	0.29 U	---	0.23 U	0.23 U	0.23 U	---
Xylene (total)	ug/l	7000	8600	0.62 U	---	0.49 U	0.49 U	0.49 U	---
1,2,4-Trichlorobenzene	ug/l	2800	130	0.15 U	<1000	0.27 U	0.27 U	0.27 U	<400
1,2-Dichlorobenzene	ug/l	5900	6800	0.22 U	<1000	0.15 U	0.15 U	0.15 U	<400
1,3-Dichlorobenzene	ug/l			0.16 U	<1000	0.11 U	0.11 U	0.11 U	<400
1,4-Dichlorobenzene	ug/l	75	75	0.18 U	<1000	0.21 U	0.21 U	0.21 U	<400
2,4,5-Trichlorophenol	ug/l			0.015 U	<5000	0.15 U	0.15 U	0.16 U	<2000
2,4,6-Trichlorophenol	ug/l			0.0089 U	<1000	0.17 U	0.17 U	0.18 U	<400
2,4-Dichlorophenol	ug/l			0.013 U	<1000	0.032 U	0.032 U	0.034 U	<400
2,4-Dimethylphenol	ug/l			0.0078 U	3100	0.082 U	0.083 U	0.087 U	<400
2,4-Dinitrophenol	ug/l			0.60 U	<5000	0.59 U	0.6 U	0.63 U	<2000
2,4-Dinitrotoluene	ug/l			0.016 U	<1000	0.052 U	0.052 U	0.055 U	<400
2-Chloronaphthalene	ug/l			0.015 U	<1000	0.015 U	0.015 U	0.015 U	<400
2-Chlorophenol	ug/l			0.021 U	<1000	0.16 U	0.16 U	0.17 U	<400
2-Methylnaphthalene	ug/l			0.015 U	1700	0.012 U	0.012 U	0.012 U	780
2-Methylphenol	ug/l			0.014 U	430 J	0.083 U	0.084 U	0.088 U	<400
2-Nitroaniline	ug/l			0.016 U	<5000	0.34 U	0.34 U	0.36 U	2000

Table 1
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2013 Vapor Intrusion Screening Information
Wells East of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Screening Levels

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	SWW-25 4/7/2009	W-9 3/26/1987	W-12R 6/5/2012	W-12R 10/23/2012	W-12R 5/1/2013	W-27 3/27/1987
2-Nitrophenol	ug/l			0.014 U	<1000	0.16 U	0.17 U	0.17 U	<400
3,3-Dichlorobenzidine	ug/l			0.035 U	<2000	0.11 U	0.11 U	0.11 U	<800
3-Nitroaniline	ug/l			0.025 U	<5000	0.31 U	0.31 U	0.33 U	<2000
4,6-Dinitro-2-methylphenol	ug/l			0.76 U	<5000	0.21 U	0.21 U	0.22 U	<2000
4-Bromophenylphenyl ether	ug/l			0.018 U	<1000	0.061 U	0.062 U	0.065 U	<400
4-Chloro-3-methylphenol	ug/l			0.025 U	<1000	0.073 U	0.073 U	0.077 U	<400
4-Chloroaniline	ug/l			0.11 U	<1000	0.085 U	0.086 U	0.09 U	<400
4-Chlorophenyl phenyl ether	ug/l			0.010 U	<1000	0.048 U	0.049 U	0.051 U	<400
4-Methylphenol	ug/l			0.017 U	<1000	---	0.088 U	0.092 U	<400
4-Nitroaniline	ug/l			0.022 U	<5000	0.17 U	0.17 U	0.18 U	<2000
4-Nitrophenol	ug/l			0.69 U	<5000	0.62 U	0.63 U	0.66 U	<2000
Acenaphthene	ug/l			0.081 J	750 J	0.014 U	0.014 U	0.015 U	840
Acenaphthylene	ug/l			0.10 J	<1000	0.015 U	0.015 U	0.016 U	<400
Anthracene	ug/l			0.18 J	230 J	0.15 U	0.15 U	0.11 J	<320
Benzo(a)anthracene	ug/l			0.13 JB	<1000	0.014 U	0.014 U	0.015 U	38 J
Benzo(a)pyrene	ug/l			0.072 JB	150 J	0.013 U	0.013 U	0.014 U	44 J
Benzo(b)fluoranthene	ug/l			0.16 J	330 J	0.015 U	0.015 U	0.016 U	100 J
Benzo(ghi)perylene	ug/l			0.081 J	<1000	0.015 U	0.015 U	0.015 U	<400
Benzo(k)fluoranthene	ug/l			0.016 U	330 J	0.053 U	0.053 U	0.056 U	100 J
Bis(2-chloroethoxy)methane	ug/l			0.013 U	<1000	0.056 U	0.056 U	0.059 U	<400
Bis(2-chloroethyl)ether	ug/l			0.026 U	<1000	0.024 U	0.024 U	0.026 U	<400
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			0.045 U	<1000	1.2 U	1.2 U	1.3 U	<400
Butyl benzyl phthalate	ug/l			0.30 U	<1000	0.15 JB	0.14 U	0.15 U	<400
Carbazole	ug/l			0.013 U	---	0.015 U	0.015 U	0.016 U	---
Chrysene	ug/l			0.11 JB	190 J	0.013 U	0.014 U	0.014 U	72 J
Dibenzo(a,h)anthracene	ug/l			0.013 U	<1000	0.015 U	0.015 U	0.016 U	<400
Dibenzofuran	ug/l			0.045 JB	310 J	0.059 U	0.06 U	0.063 U	360 J
Diethyl phthalate	ug/l			0.044 U	<1000	0.14 U	0.14 U	0.15 J	<400
Dimethyl phthalate	ug/l			0.014 U	<1000	0.074 U	0.074 U	0.078 U	<400
Di-n-butyl phthalate	ug/l			0.029 U	140 J	0.12 U	0.12 U	0.13 U	<400
Di-n-octyl phthalate	ug/l			0.015 U	<1000	0.2 U	0.2 U	0.21 U	<400
Fluoranthene	ug/l			0.17 J	370 J	0.016 U	0.016 U	0.017 U	240 J
Fluorene	ug/l			0.0097 U	400	0.021 U	0.021 U	0.022 U	360 J
Hexachlorobenzene	ug/l			0.018 U	<1000	0.018 U	0.018 U	0.019 U	<400
Hexachlorobutadiene	ug/l	1	1	0.012 U	<1000	0.016 U	0.016 U	0.017 U	<400
Hexachlorocyclopentadiene	ug/l			0.011 U	<1000	0.05 U	0.05 U	0.053 U	<400
Hexachloroethane	ug/l			0.0075 U	<1000	0.06 U	0.061 U	0.064 U	<400
Indeno(1,2,3-cd)pyrene	ug/l			0.044 J	<1000	0.019 U	0.019 U	0.02 U	<400
Isophorone	ug/l			0.028 U	<1000	0.062 U	0.063 U	0.066 U	<400
Naphthalene	ug/l	---	300	0.11 J	15000	0.013 U	0.014 U	0.014 U	7000
Nitrobenzene	ug/l			0.018 U	<1000	0.081 U	0.082 U	0.086 U	<400
N-Nitrosodiphenylamine	ug/l			0.048 U	<1000	0.082 U	0.083 U	0.087 U	<400
N-Nitrosodipropylamine	ug/l			0.038 U	<1000	0.03 U	0.03 U	0.031 U	<400
Pentachlorophenol	ug/l			0.18 U	<5000	0.064 U	0.064 U	0.068 U	<2000
Phenanthrene	ug/l			0.087 JB	680 J	0.049 J	0.041 U	0.044 U	<740
Phenol	ug/l			0.023 U	<1000	0.056 U	0.056 U	0.059 U	<400
Pyrene	ug/l			0.21	410 J	0.017 J	0.015 U	0.016 U	280 J

Notes: GWSL = Ground Water Screening Levels
ug/l = micrograms per liter
U = result not detected at reported concentration
J = estimated result
B = blank contamination

Constituents with GWSL not included due to limited data: Bromoethene (vinyl bromide), 1,3-Butadiene (vinyl ethylene), 3-Chloropropene (allyl chloride), Cyclohexane, 1,2-Dibromoethane (ethylene dibromide), Dichlorodifluoromethane (Freon 12), 1,3-Dichlorop

Exceeds 2007 GWSL
Exceeds 2013 GWSL
Exceeds 2007 and 2013 GWSL

Table 2
Kopper Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells West of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Standards

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-108 4/29/2010	MW-108 10/6/2010	MW-108 6/23/2011	MW-109 4/9/2009	MW-109 10/14/2009	MW-109 4/28/2010	MW-120 4/9/2009	MW-120 10/14/2009	MW-120 4/28/2010
1,1,1-Trichloroethane	ug/l	2300	13000	11 U	29 U	14 U	1.3 U	1.4 U	1.4 U	0.25 U	0.29 U	0.29 U
1,1,2,2-Tetrachloroethane	ug/l	4	6	8.0 U	20 U	10 U	0.77 U	1.0 U	1.0 U	0.15 U	0.20 U	0.20 U
1,1,2-Trichloroethane	ug/l	5	8	8.1 U	20 U	10 U	0.98 U	1.0 U	1.0 U	0.20 U	0.20 U	0.20 U
1,1-Dichloroethane	ug/l	3600	50	4.7 U	12 U	5.8 U	1.2 U	0.58 U	0.58 U	0.24 U	0.12 U	0.12 U
1,1-Dichloroethylene	ug/l	250	260	12 U	30 U	15 U	1.4 U	1.5 U	1.5 U	0.28 U	0.30 U	0.30 U
1,2-Dichloroethane	ug/l	2	3	8.5 U	21 U	11 U	1.1 U	1.1 U	1.1 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	ug/l	1	4	3.8 U	9.5 U	4.7 U	0.90 U	0.47 U	0.47 U	0.18 U	0.095 U	0.095 U
2-Butanone	ug/l	2700000	2500000	22 U	55 U	27 U	2.5 U	2.7 U	2.7 U	0.50 U	0.55 U	0.55 U
2-Hexanone	ug/l			6.4 U	16 U	8 U	2.7 U	0.80 U	0.80 U	0.53 U	0.16 U	0.16 U
4-Methyl-2-pentanone	ug/l	880000	900000	21 U	53 U	26 U	1.1 U	2.6 U	2.6 U	0.23 U	0.53 U	0.53 U
Acetone	ug/l	1900000	21000000	100 U	250 U	130 U	12 U	12 U	12 U	5	5.3B	3.1 JB
Benzene	ug/l	15	20	88	350	410	1.4 U	0.53 U	0.53 U	0.27 U	0.51 J	1.8
Bromodichloromethane	ug/l	5	2	5.2 U	13 U	6.5 U	1.0 U	0.65 U	0.65 U	0.20 U	0.13 U	0.13 U
Bromoform	ug/l	370	300	7.7 U	19 U	9.6 U	1.2 U	0.96 U	0.96 U	0.25 U	0.19 U	0.19 U
Bromomethane	ug/l	29	20	13 U	31 U	16 U	1.5 U	1.6 U	1.6 U	0.30 U	0.31 U	0.31 U
Carbon disulfide	ug/l	710	1500	8.5 U	21 U	11 U	0.98 U	1.1 U	1.3 JB	0.20 U	0.21 U	0.25 U
Carbon Tetrachloride	ug/l	1	1	5.5 U	14 U	6.8 U	1.5 U	0.68 U	0.68 U	0.30 U	0.14 U	0.14 U
Chlorobenzene	ug/l	640	770	130	560	720	82	110	82	0.23 U	0.14 U	0.14 U
Chloroethane	ug/l	4	26000	8.6 U	21 U	11 U	1.2 U	1.1 U	1.1 U	0.25 U	0.21 U	0.21 U
Chloroform	ug/l	70	70	6.8 U	17 U	8.5 U	1.2 U	0.85 U	0.85 U	0.24 U	0.17 U	0.17 U
Chloromethane	ug/l	240	240	11 U	28 U	14 U	1.3 U	1.4 U	1.4 U	0.27 U	0.28 U	0.28 U
cis-1,2-Dichloroethylene	ug/l			9.5 U	24 U	12 U	1.4 U	1.2 U	1.2 U	0.27 U	0.24 U	0.24 U
cis-1,3-Dichloropropene	ug/l			7.5 U	19 U	9.3 U	0.97 U	0.93 U	0.93 U	0.19 U	0.19 U	0.19 U
Dibromochloromethane	ug/l	9	6	5.5 U	14 U	6.8 U	0.82 U	0.68 U	0.68 U	0.16 U	0.14 U	0.14 U
Ethylbenzene	ug/l	61000	700	9.1 U	23 U	11 U	0.91 U	1.1 U	1.1 U	0.18 U	0.23 U	0.23 U
Methylene chloride	ug/l	53	920	6.0 U	15 U	7.5 U	1.6 U	2.4 JB	3.5 J	0.32 U	0.15 U	0.15 U
Styrene	ug/l	18000	180000	3.9 U	9.7 U	4.8 U	1.1 U	0.48 U	0.48 U	0.22 U	0.097 U	0.097 U
Tetrachloroethylene	ug/l	1	31	5.9 U	15 U	7.4 U	1.2 U	0.74 U	0.74 U	0.24 U	0.15 U	0.15 U
Toluene	ug/l	310000	330000	6.0 U	15 U	7.5 U	1.2 U	0.75 U	0.75 U	0.23 U	0.15 U	0.15 U
trans-1,2-Dichloroethene	ug/l	300	520	6.8 U	17 U	8.5 U	1.4 U	0.85 U	0.85 U	0.27 U	0.17 U	0.17 U
Trans-1,3-Dichloropropene	ug/l			5.9 U	15 U	7.4 U	0.92 U	0.74 U	0.74 U	0.18 U	0.15 U	0.15 U
Trichloroethylene	ug/l	1	2	5.7 U	14 U	7.2 U	1.5 U	0.72 U	0.72 U	0.29 U	0.14 U	0.14 U
Vinyl chloride	ug/l	1	1	9.1 U	23 U	11 U	1.5 U	1.1 U	1.1 U	0.29 U	0.23 U	0.23 U
Xylene (total)	ug/l	7000	8600	38 J	49 U	24 U	3.1 U	2.4 U	2.4 U	0.62 U	0.49 U	0.49 U
1,2,4-Trichlorobenzene	ug/l	2800	130	11 U	27 U	14 U	0.75 U	1.4 U	1.4 U	0.15 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/l	5900	6800	6.1 U	15 U	7.6 U	1.1 U	0.92 J	0.80 J	0.22 U	0.15 U	0.15 U
1,3-Dichlorobenzene	ug/l			4.2 U	11 U	5.3 U	1.9 J	2.8 J	2.4 J	0.16 U	0.11 U	0.11 U
1,4-Dichlorobenzene	ug/l	75	75	800	1300	1100	3 J	5.4	3.6 J	0.18 U	0.21 U	0.21 U
2,2'-oxybis(1-chloropropane)	ug/l			3.9 U	4.0 U	0.097 U	0.033 U	0.033 U	0.019 U	0.035 U	0.034 U	0.019 U
2,4,5-Trichlorophenol	ug/l			30 U	31 U	0.75 U	0.015 U	0.014 U	0.14 U	0.015 U	0.015 U	0.14 U
2,4,6-Trichlorophenol	ug/l			34 U	36 U	0.86 U	0.0087 U	0.0086 U	0.16 U	0.0091 U	0.0088 U	0.16 U
2,4-Dichlorophenol	ug/l			6.5 U	6.8 U	1.8	0.013 U	0.013 U	0.031 U	0.014 U	0.013 U	0.031 U
2,4-Dimethylphenol	ug/l			17 U	20 J	17	0.0077 U	0.0076 U	0.080 U	0.0080 U	0.0078 U	0.38 J
2,4-Dinitrophenol	ug/l			120 U	130 U	3 U	0.59 U	0.58 U	0.58 U	0.61 U	0.60 U	0.58 U
2,4-Dinitrotoluene	ug/l			11 U	11 U	0.26 U	0.016 U	0.016 U	0.050 U	0.016 U	0.016 U	0.050 U
2,6-Dinitrotoluene	ug/l			16 U	16 U	0.39 U	0.018 U	0.018 U	0.075 U	0.019 U	0.019 U	0.075 U
2-Chloronaphthalene	ug/l			3.0 U	3.1 U	0.074 U	0.014 U	0.014 U	0.014 U	0.015 U	0.015 U	0.014 U
2-Chlorophenol	ug/l			32 U	34 U	0.81 U	0.53 J	0.23 J	0.16 U	0.021 U	0.020 U	0.16 U
2-Methylnaphthalene	ug/l			200	110	150	0.015 U	0.015 U	0.011 U	0.016 U	0.015 U	0.011 U
2-Methylphenol	ug/l			17 U	18 U	13	0.013 U	0.013 U	0.081 U	0.014 U	0.014 U	0.081 U
2-Nitroaniline	ug/l			69 U	72 U	1.7 U	0.016 U	0.016 U	0.33 U	0.017 U	0.016 U	0.33 U
2-Nitrophenol	ug/l			33 U	35 U	0.84 U	0.013 U	0.013 U	0.16 U	0.014 U	0.014 U	0.16 U

Table 2
Kopper Seaboard Site ~ PI # G000001985
2013 Vapor Intrusion Screening Information
Wells West of Standard Chlorine Slurry Wall
Shallow Zone Groundwater Contaminant Concentrations vs Groundwater Standards

CONSTITUENT	UNITS	GWSL March 2007	GWSL March 2013	MW-108 4/29/2010	MW-108 10/6/2010	MW-108 6/23/2011	MW-109 4/9/2009	MW-109 10/14/2009	MW-109 4/28/2010	MW-120 4/9/2009	MW-120 10/14/2009	MW-120 4/28/2010
3,3-Dichlorobenzidine	ug/l			22 U	23 U	0.55 U	0.035 U	0.034 U	0.11 U	0.036 U	0.035 U	0.11 U
3-Nitroaniline	ug/l			63 U	66 U	1.6 U	0.025 U	0.025 U	0.30 U	0.026 U	0.025 U	0.30 U
4,6-Dinitro-2-methylphenol	ug/l			43 U	45 U	1.1 U	0.75 U	0.74 U	0.21 U	0.78 U	0.76 U	0.21 U
4-Bromophenylphenyl ether	ug/l			12 U	13 U	0.31 U	0.018 U	0.018 U	0.060 U	0.019 U	0.018 U	0.060 U
4-Chloro-3-methylphenol	ug/l			15 U	15 U	0.37 U	0.024 U	0.024 U	0.071 U	0.025 U	0.025 U	0.071 U
4-Chloroaniline	ug/l			17 U	18 U	0.43 U	0.10 U	0.10 U	0.083 U	0.11 U	0.11 U	0.083 U
4-Chlorophenyl phenyl ether	ug/l			9.9 U	10 U	0.25 U	0.010 U	0.0099 U	0.047 U	0.010 U	0.010 U	0.047 U
4-Methylphenol	ug/l			18 U	18 U	6.4	0.017 U	0.017 U	0.085 U	0.018 U	0.017 U	0.085 U
4-Nitroaniline	ug/l			34 U	35 U	0.85 U	0.022 U	0.022 U	0.16 U	0.023 U	0.022 U	0.16 U
4-Nitrophenol	ug/l			120 U	120 U	3.2 U	0.68 U	0.67 U	0.57 U	0.70 U	0.68 U	0.57 U
Acenaphthene	ug/l			66	37 J	48	0.014 U	0.014 U	0.021 J	0.52	0.31	0.24
Acenaphthylene	ug/l			3.0 U	3.1 U	0.7 J	0.0082 U	0.0081 U	0.014 U	0.74	0.78	1.1
Anthracene	ug/l			3.0 U	3.1 U	0.74 U	0.0083 U	0.022 J	0.035 J	0.62	0.62	1.5
Benzo(a)anthracene	ug/l			2.9 U	3.0 U	0.072 U	0.017 U	0.017 U	0.014 U	0.070 J	0.26	0.29
Benzo(a)pyrene	ug/l			2.6 U	2.7 U	0.066 U	0.011 U	0.011 U	0.013 U	0.012 U	0.21	0.19
Benzo(b)fluoranthene	ug/l			3.1 U	3.2 U	0.077 U	0.016 U	0.015 U	0.015 U	0.016 U	0.26	0.29
Benzo(ghi)perylene	ug/l			3.0 U	3.1 U	0.074 U	0.0083 U	0.0082 U	0.014 U	0.0087 U	0.16 J	0.12 J
Benzo(k)fluoranthene	ug/l			11 U	11 U	0.27 U	0.016 U	0.016 U	0.051 U	0.016 U	0.064 J	0.051 U
Bis(2-chloroethoxy)methane	ug/l			11 U	12 U	0.28 U	0.013 U	0.013 U	0.055 U	0.014 U	0.013 U	0.055 U
Bis(2-chloroethyl)ether	ug/l			4.9 U	5.1 U	0.12 U	0.025 U	0.025 U	0.024 U	0.026 U	0.026 U	0.024 U
Bis(2-ethylhexyl)phthalate (BEHP)	ug/l			160 U	160 U	6.1 U	0.19 JB	0.044 U	0.75 U	0.091 JB	0.045 U	0.75 U
Butyl benzyl phthalate	ug/l			28 U	29 U	0.7 U	0.29 U	0.29 U	0.13 U	0.40 J	0.30 U	0.13 U
Carbazole	ug/l			3.1 U	3.2 U	7.7	0.013 U	0.013 U	0.015 U	0.99	0.71	0.26
Chrysene	ug/l			2.7 U	2.9 U	0.069 U	0.010 U	0.010 U	0.013 U	0.043 J	0.24	0.23
Dibenzo(a,h)anthracene	ug/l			3.0 U	3.2 U	0.076 U	0.012 U	0.012 U	0.015 U	0.013 U	0.19	0.015 U
Dibenzofuran	ug/l			18 J	13 U	13	0.018 U	0.018 U	0.058 U	1.1	0.79 J	0.40 J
Diethyl phthalate	ug/l			29 U	30 U	0.72 U	0.043 U	0.043 U	0.14 U	0.045 U	0.044 U	0.14 U
Dimethyl phthalate	ug/l			15 U	16 U	0.38 U	0.013 U	0.013 U	0.072 U	0.014 U	0.014 U	0.072 U
Di-n-butyl phthalate	ug/l			24 U	25 U	0.61 U	0.029 U	0.028 U	0.12 U	0.18 J	0.094 J	0.12 U
Di-n-octyl phthalate	ug/l			40 U	42 U	1 U	0.015 U	0.015 U	0.19 U	0.016 U	0.015 U	0.19 U
Fluoranthene	ug/l			3.2 U	3.3 U	0.39 J	0.0096 U	0.0095 U	0.015 U	1.1	2.4	2.8
Fluorene	ug/l			9.1 J	4.4 U	7.2	0.0095 U	0.0094 U	0.020 U	0.32	0.39	0.6
Hexachlorobenzene	ug/l			3.6 U	3.7 U	0.09 U	0.017 U	0.017 U	0.017 U	0.018 U	0.018 U	0.017 U
Hexachlorobutadiene	ug/l	1	1	3.3 U	3.4 U	0.081 U	0.012 U	0.011 U	0.016 U	0.012 U	0.012 U	0.016 U
Hexachlorocyclopentadiene	ug/l			10 U	11 U	0.25 U	0.011 U	0.011 U	0.049 U	0.012 U	0.011 U	0.049 U
Hexachloroethane	ug/l			12 U	13 U	0.31 U	0.0074 U	0.0073 U	0.059 U	0.0077 U	0.0075 U	0.059 U
Indeno(1,2,3-cd)pyrene	ug/l			3.9 U	4.1 U	0.098 U	0.015 U	0.015 U	0.019 U	0.016 U	0.23	0.096 J
Isophorone	ug/l			13 U	13 U	0.32 U	0.028 U	0.027 U	0.061 U	0.029 U	0.028 U	0.061 U
Naphthalene	ug/l	---	300	6600	4900	5500	0.027 U	0.027 U	0.013 U	0.028 U	0.045 J	0.12 J
Nitrobenzene	ug/l			17 U	17 U	0.41 U	0.017 U	0.017 U	0.079 U	0.018 U	0.017 U	0.079 U
N-Nitrosodiphenylamine	ug/l			17 U	17 U	0.42 U	0.047 U	0.046 U	0.080 U	0.049 U	0.047 U	0.080 U
N-Nitrosodipropylamine	ug/l			6.0 U	6.3 U	0.15 U	0.037 U	0.037 U	0.029 U	0.039 U	0.037 U	0.029 U
Pentachlorophenol	ug/l			13 U	14 U	0.33 U	0.18 U	0.18 U	0.062 U	0.19 U	0.18 U	0.062 U
Phenanthrene	ug/l			8.4 U	8.7 U	2.4	0.027 U	0.027 U	0.049 JB	0.17 J	0.23	0.17 JB
Phenol	ug/l			14 J	12 U	4.4	0.023 U	0.023 U	0.055 U	0.024 U	0.023 U	0.055 U
Pyrene	ug/l			3.1 U	3.2 U	0.29 J	0.011 U	0.011 U	0.015 U	0.5	1.2	1.6

Notes:

GWSL = Ground Water Screening Levels

ug/l = micrograms per liter

U = result not detected at reported concentration

J = estimated result

B = blank contamination

Exceeds 2007 GWSL

Exceeds 2013 GWSL

Exceeds 2007 and 2013 GWSL

2013
VAPOR INTRUSION EVALUATION
Supporting Information

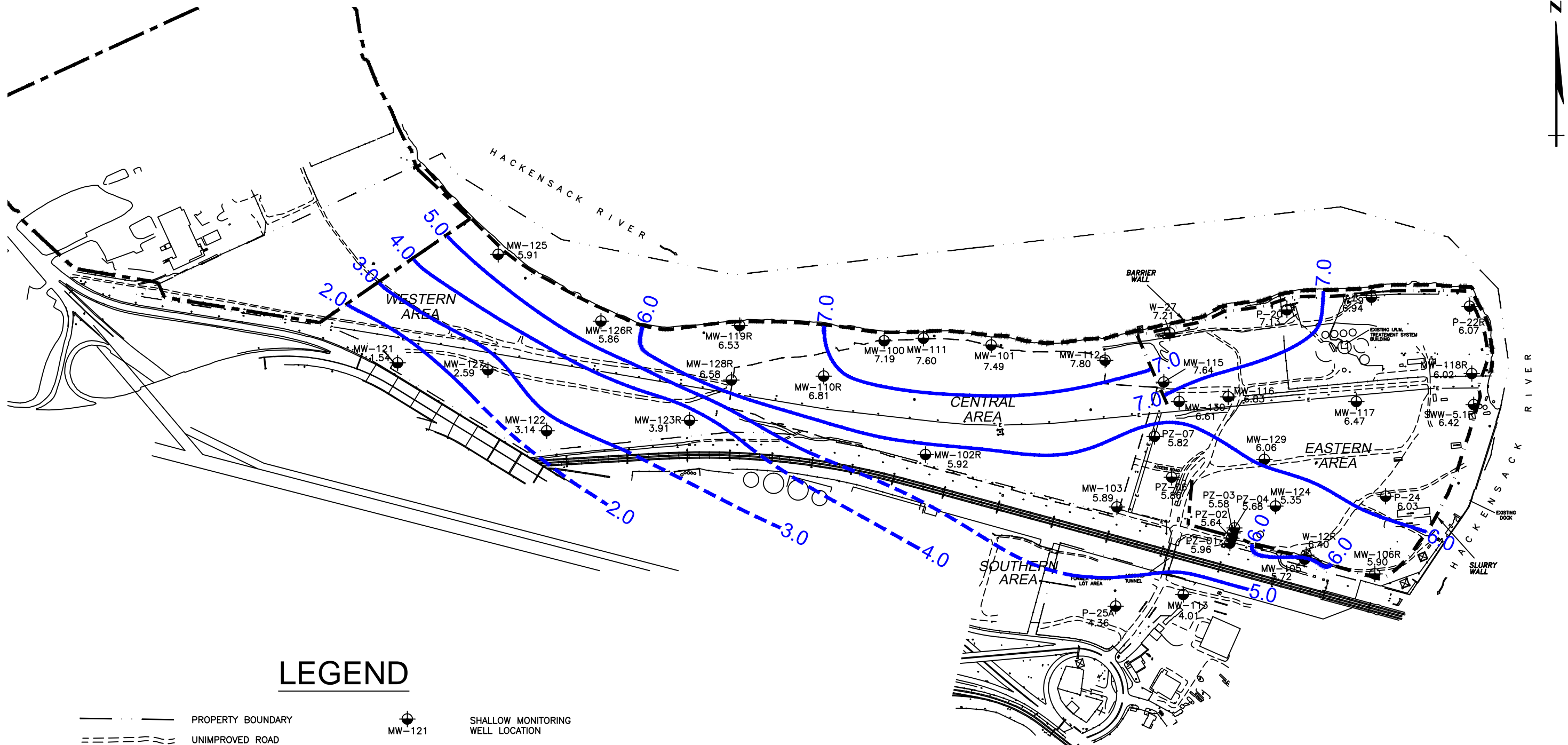
FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

Attachment B
Site Map

The enclosed Figures (3-1) provide several examples of the “Shallow Zone Potentiometric Surface Map” for the groundwater level measurements. Also provided on the maps are shallow zone monitoring well locations.

KEY

y:\seaboard\08-600-23\2013 3rd quarter\figure 3-1.dwg Last Saved By: Kchintella 7/22/2013 2:39 PM Plotted By: Kendra L. Chintella 7/22/2013 2:39 PM Scale: 1:1016052



LEGEND

- PROPERTY BOUNDARY
- UNIMPROVED ROAD
- IMPROVED ROAD
- RAILROAD TRACKS
- TRANSMISSION TOWER
- EXISTING STRUCTURES
- UTILITY POLES
- C/B WALL
- PRG SLURRY WALL LOCATION
- SHALLOW MONITORING WELL LOCATION
- SLURRY WALL LOCATION
- BARRIER WALL LOCATION
- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION CONTOUR (FT-MSL)
(DASHED WHERE INFERRED)
- POTENTIOMETRIC SURFACE ELEVATION (FT-MSL)



BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: KC	DATE: 07/18/13		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: JP	DATE: 07/18/13		
APPD: JAB	DATE: 07/18/13		
SCALE: AS SHOWN	ISSUE DATE:		

THIRD QUARTER 2013
GROUNDWATER MONITORING PROGRESS REPORT
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

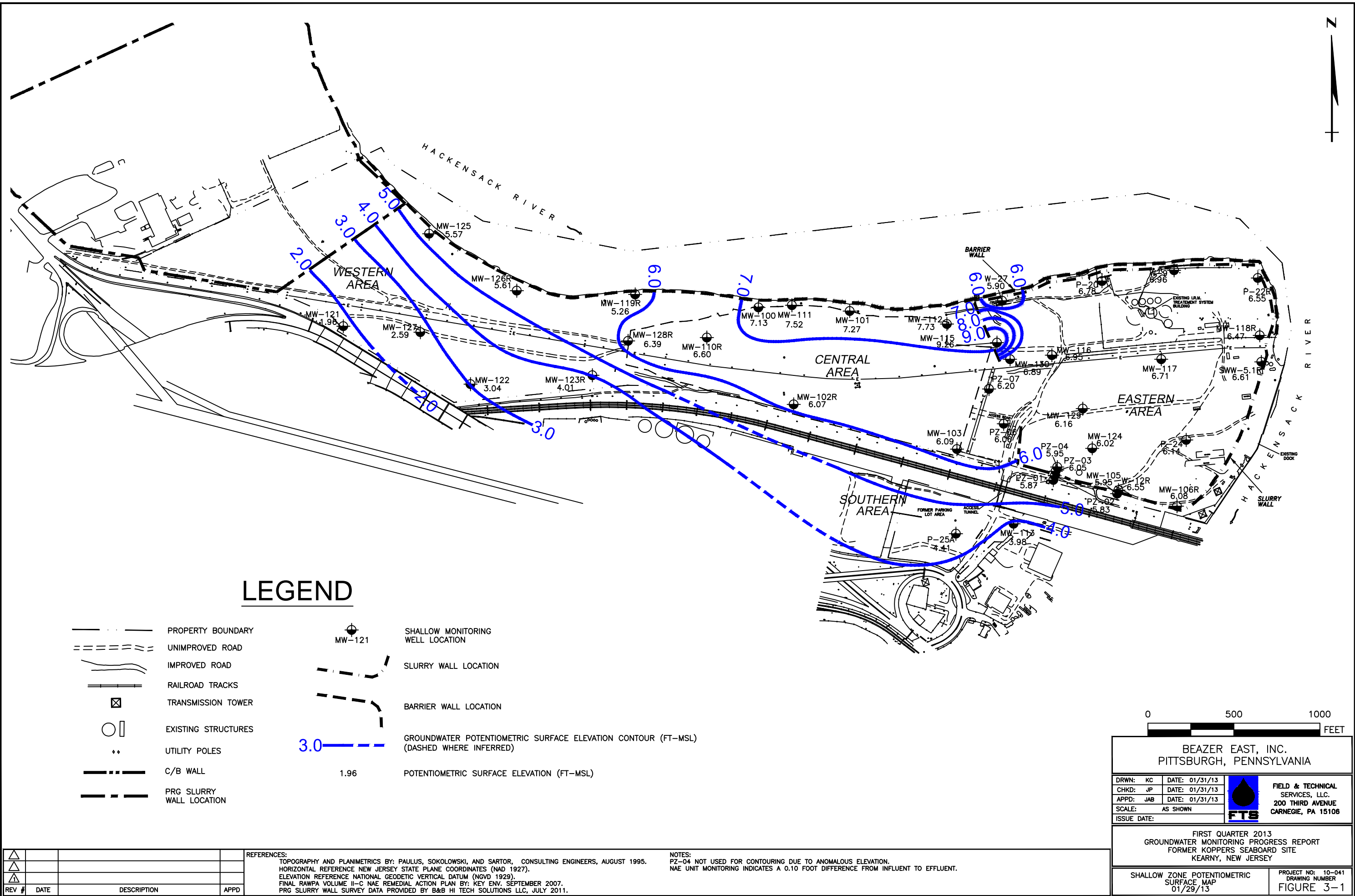
SHALLOW ZONE POTENTIOMETRIC SURFACE MAP 7/16/13	PROJECT NO: 10-041 DRAWING NUMBER FIGURE 3-1
--	--

REFERENCES:
TOPOGRAPHY AND PLANIMETRICS BY: PAULUS, SOKOLOWSKI, AND SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1927).
ELEVATION REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
FINAL RAWPA VOLUME II-C NAE REMEDIAL ACTION PLAN BY: KEY ENV. SEPTEMBER 2007.
PRG SLURRY WALL SURVEY DATA PROVIDED BY B&B HI TECH SOLUTIONS LLC, JULY 2011.

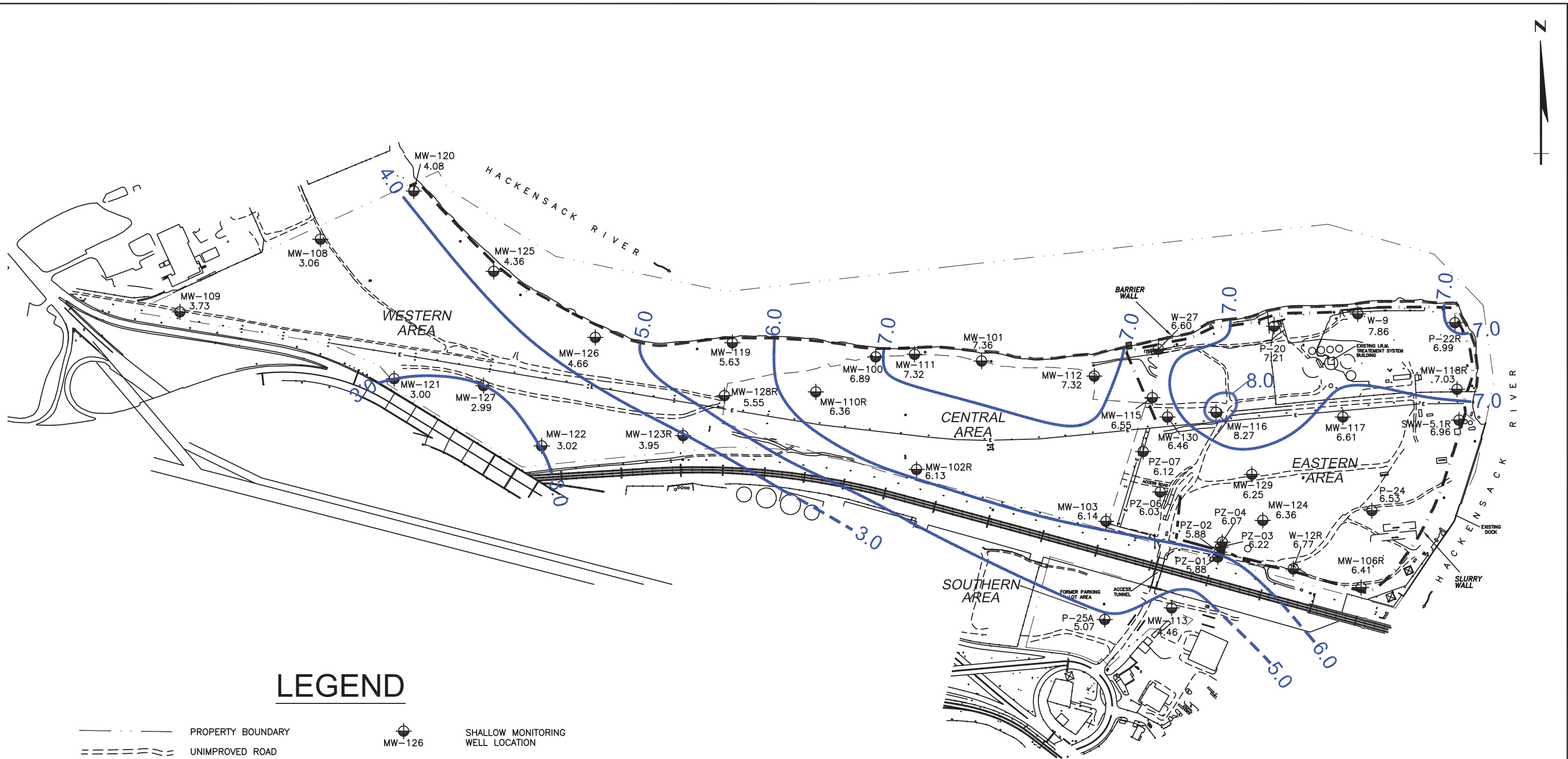
NOTES:
NAE UNIT MONITORING INDICATES A 0.10 FOOT DIFFERENCE FROM INFLUENT TO EFFLUENT.

REV #	DATE	DESCRIPTION	APPD

y:\seaboard\08-600-23\2013 1st quarter\figure 3-1.dwg Last Saved By: KCHINIELLA 5/7/2013 2:05 PM Plotted By: Kendra L. Chintella 5/7/2013 2:05 PM Scale: 1:1.016052



v:\eeboard\08-600-23\2010 2nd quarter\Figure 3-1.dwg Last Saved By: Kchintella 7/27/2010 12:20 PM Plotted By: Kendra L. Chintella 7/27/2010 12:22 PM Scale: 1:1



LEGEND

	PROPERTY BOUNDARY		SHALLOW MONITORING WELL LOCATION
	UNIMPROVED ROAD		SLURRY WALL LOCATION
	IMPROVED ROAD		BARRIER WALL LOCATION
	RAILROAD TRACKS		GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION CONTOUR (FT-MSL) (DASHED WHERE INFERRED)
	TRANSMISSION TOWER		POTENTIOMETRIC SURFACE ELEVATION (FT-MSL)
	EXISTING STRUCTURES		
	UTILITY POLES		
	C/B WALL		

NOTES:

1. POST GAC UNIT START-UP MONITORING EVENT III CONDUCTED 10/01/09.

REFERENCES:

TOPOGRAPHY AND PLANIMETRICS BY: PAULUS, SOKOLOWSKI, AND SARTOR,
CONSULTING ENGINEERS, AUGUST 1995.
HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1927).

ELEVATION REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).

FINAL RAWPA VOLUME II-C NAE REMEDIAL ACTION PLAN BY: KEY ENV. SEPTEMBER 2007.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: KC	DATE: 05/06/10
CHKD: SB	DATE: 05/06/10
APPD: JAB	DATE: 05/06/10
SCALE: AS SHOWN	

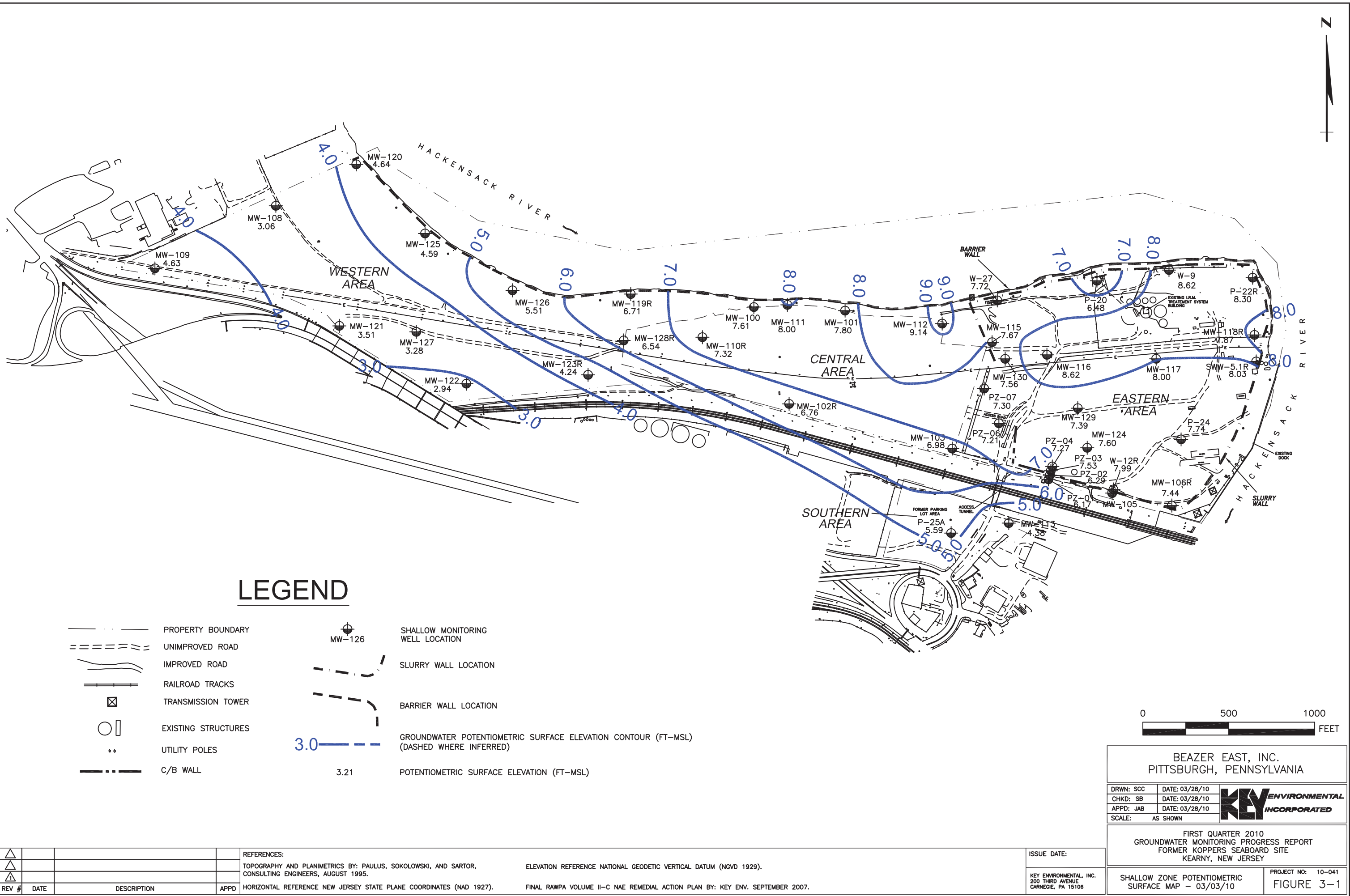
KEY ENVIRONMENTAL
INCORPORATED

SECOND QUARTER 2010
GROUNDWATER MONITORING PROGRESS REPORT
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

SHALLOW ZONE POTENTIOMETRIC
SURFACE MAP - 04/26/10

PROJECT NO: 09-882
FIGURE 3-1

v:\acboard\08-600-2\3\2010 1st quarter\figure 3-1.dwg Last Saved By: Scomer 5/12/2010 9:50 AM Plotted By: Shelly Comer 5/12/2010 9:51 AM Scale: 1:1



2013
VAPOR INTRUSION EVALUATION
Supporting Information

FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

Attachment C
Apparent DNAPL Thickness Data

Table 3-3 provides a listing of on-site shallow zone monitoring wells and associated apparent DNAPL thickness (if any).

KEY

TABLE 3-3
APPARENT DNAPL THICKNESS DATA
Second Quarter 2013 - Groundwater Monitoring and Progress Report
Former Koppers Seaboard Site
Kearny, New Jersey

Well ID	4/29 - 30/2013		
	Depth to DNAPL (ft-toc)	Total Depth (ft-toc)	DNAPL Thickness (ft)
MW-112	NP	25.59	NP
MW-115	27.06	27.89	0.83
MW-116	NP	23.87	NP
MW-117	NP	27.84	NP
MW-118R	NP	20.07	NP
MW-124	24.69	24.69	Trace
MW-129	NP	20.81	NP
MW-130	NP	24.11	NP
P-20	17.56	23.76	6.20
P-22R	NP	19.23	NP
P-24	NP	22.13	NP
SWW-5.1R	NP	13.84	NP
W-9	19.38	23.37	3.99
W-27	17.87	23.37	5.50
C-3	NP	77.48	NP
SWW-6.5	NP	67.98	NP
SWW-7.5	NP	86.22	NP
SWW-9	NP	80.23	NP
W-25	NP	74.95	NP
W-29R	NP	85.52	NP
PZ-01	NP	12.23	NP
PZ-02	14.74	14.74	Trace
PZ-03	14.84	15.14	0.30
PZ-04	15.93	15.93	Trace
PZ-07	NP	22.43	NP
CA-01-Effluent	NP	7.96	NP
CA-02-Effluent	NP	7.99	NP
CA-03-Effluent	NP	8.00	NP

Notes:

ft-toc = feet below top of casing

NP = no product detected

2013
VAPOR INTRUSION EVALUATION
Supporting Information

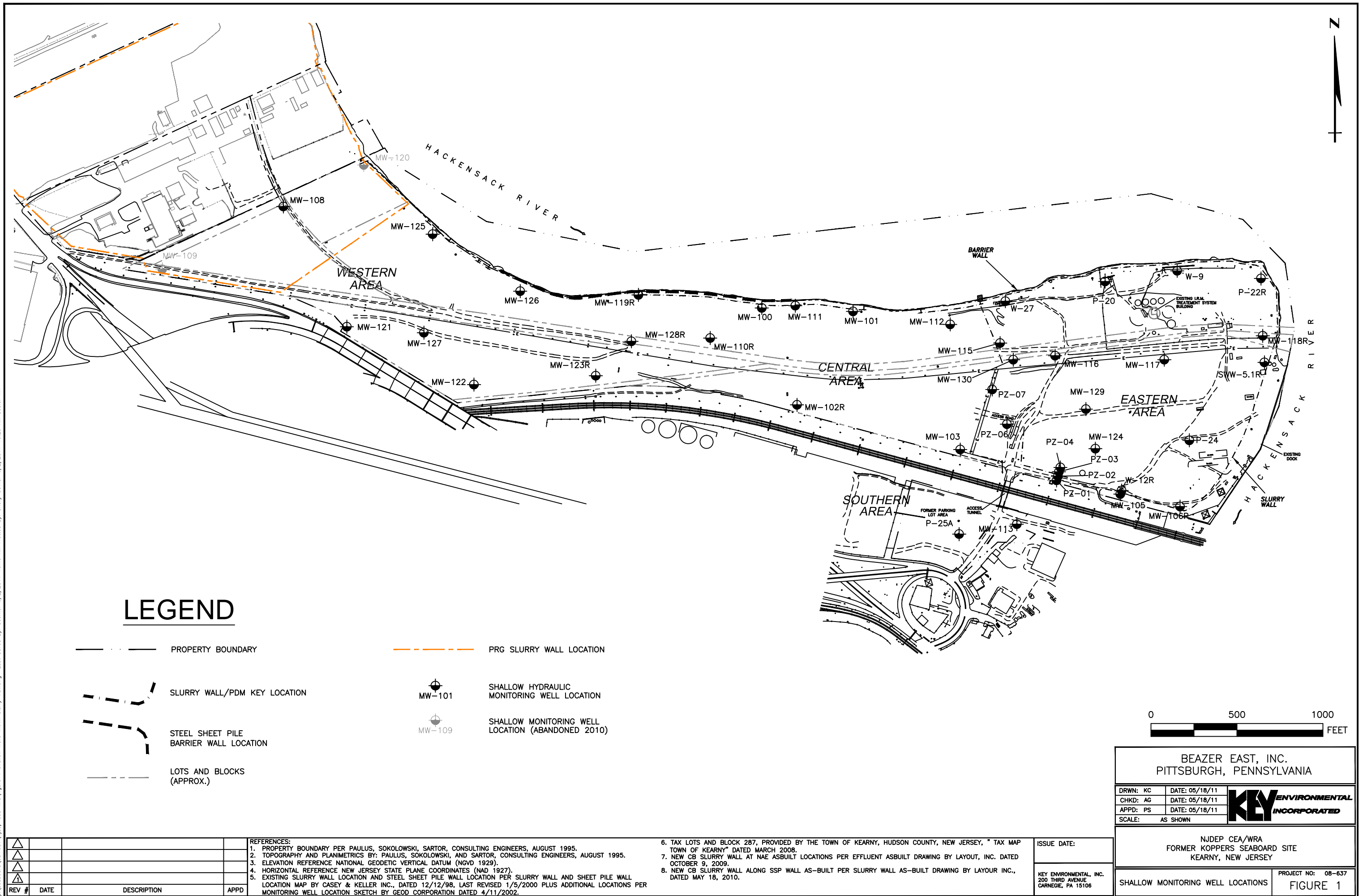
FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

Attachment D
IRM System Location and DNAPL Limits

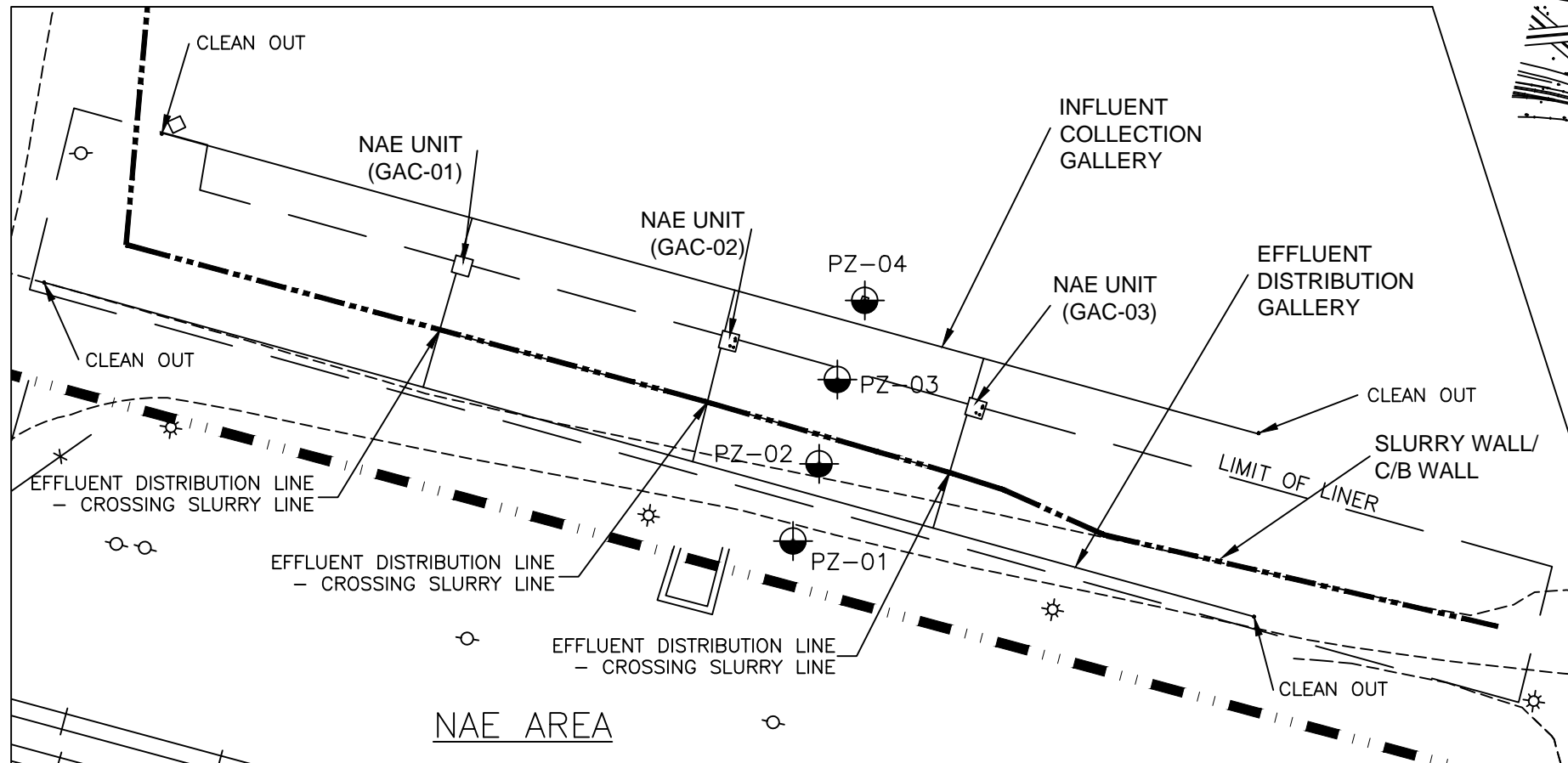
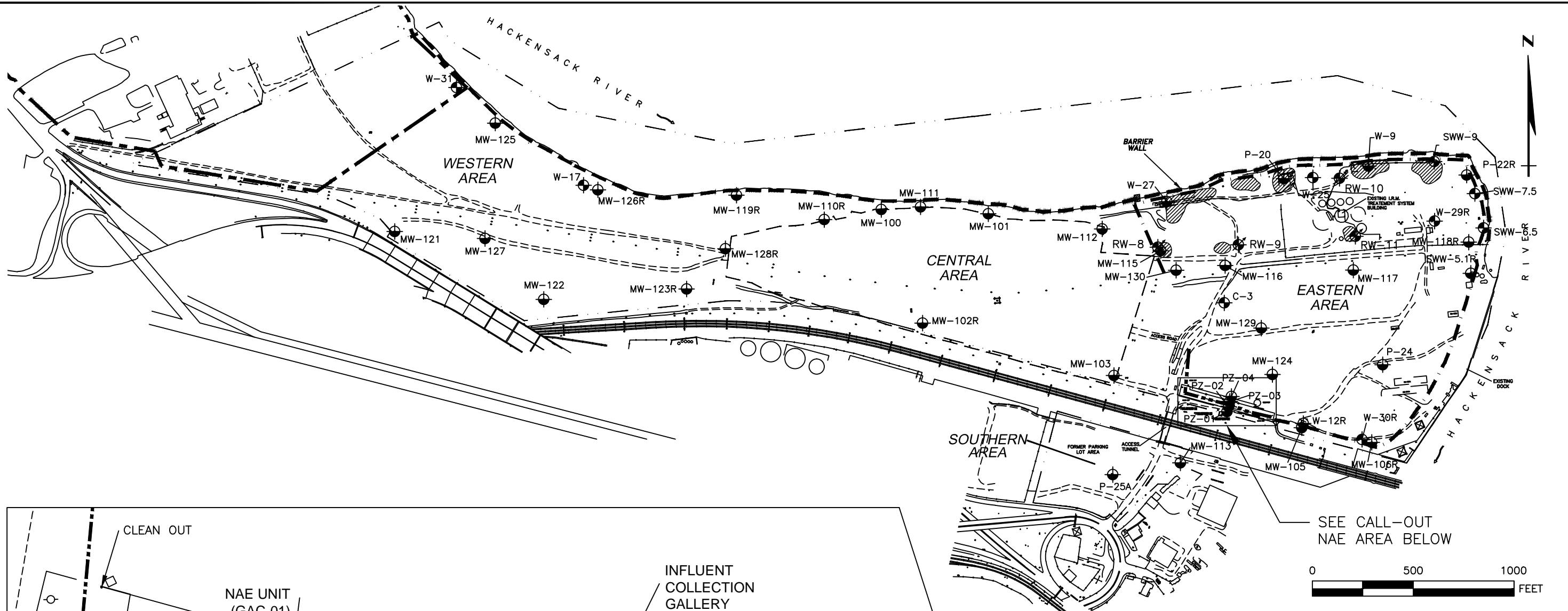
Figure 1 provides on-site monitoring well locations west of the Standard Chlorine slurry wall.

Figure 3-4 provides the locations of inferred DNAPL extent. Also provided on this figure is the location of on-site “Existing IRM Treatment System Building”.

KEY



y:\seaboard\08-600-23\2013 2nd quarter\Figure 3-4.dwg Last Saved By: KCHINTELLA 5/1/2013 9:26 AM Plotted By: Kendra L. Chintella 5/1/2013 9:27 AM Scale: 1:1016052



LEGEND

	PROPERTY BOUNDARY		DEEP MONITORING WELL LOCATION
	UNIMPROVED ROAD		SHALLOW MONITORING WELL OR PIEZOMETER LOCATION
	IMPROVED ROAD		SLURRY WALL LOCATION
	RAILROAD TRACKS		BARRIER WALL LOCATION
	TRANSMISSION TOWER		C/B WALL
	EXISTING STRUCTURES		
	UTILITY POLES		
	RECOVERY WELL		
	DNAPL OBSERVED IN MONITORING POINTS IN HATCHED AREAS		
	PRG SLURRY WALL LOCATION		

0 50 100 FEET

REV #	DATE	DESCRIPTION	APPD

REFERENCES:
TOPOGRAPHY AND PLANIMETRICS BY: PAULUS, SOKOLOWSKI, AND SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1927).
ELEVATION REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
NAE AREA SURVEY DATA PROVIDED BY LAYOUT INC. NOVEMBER 2009.
PRG SLURRY WALL SURVEY DATA PROVIDED BY B&B HI TECH SOLUTIONS LLC, JULY 2011.

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: KC	DATE: 05/01/13		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: JP	DATE: 05/01/13		
APPD: JAB	DATE: 05/01/13		
SCALE: AS SHOWN	ISSUE DATE:		

SECOND QUARTER 2013
GROUNDWATER MONITORING PROGRESS REPORT
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

IRM SYSTEM LOCATION AND DNAPL LIMITS

PROJECT NO: 10-041
DRAWING NUMBER
FIGURE 3-4

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)**

and

**REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

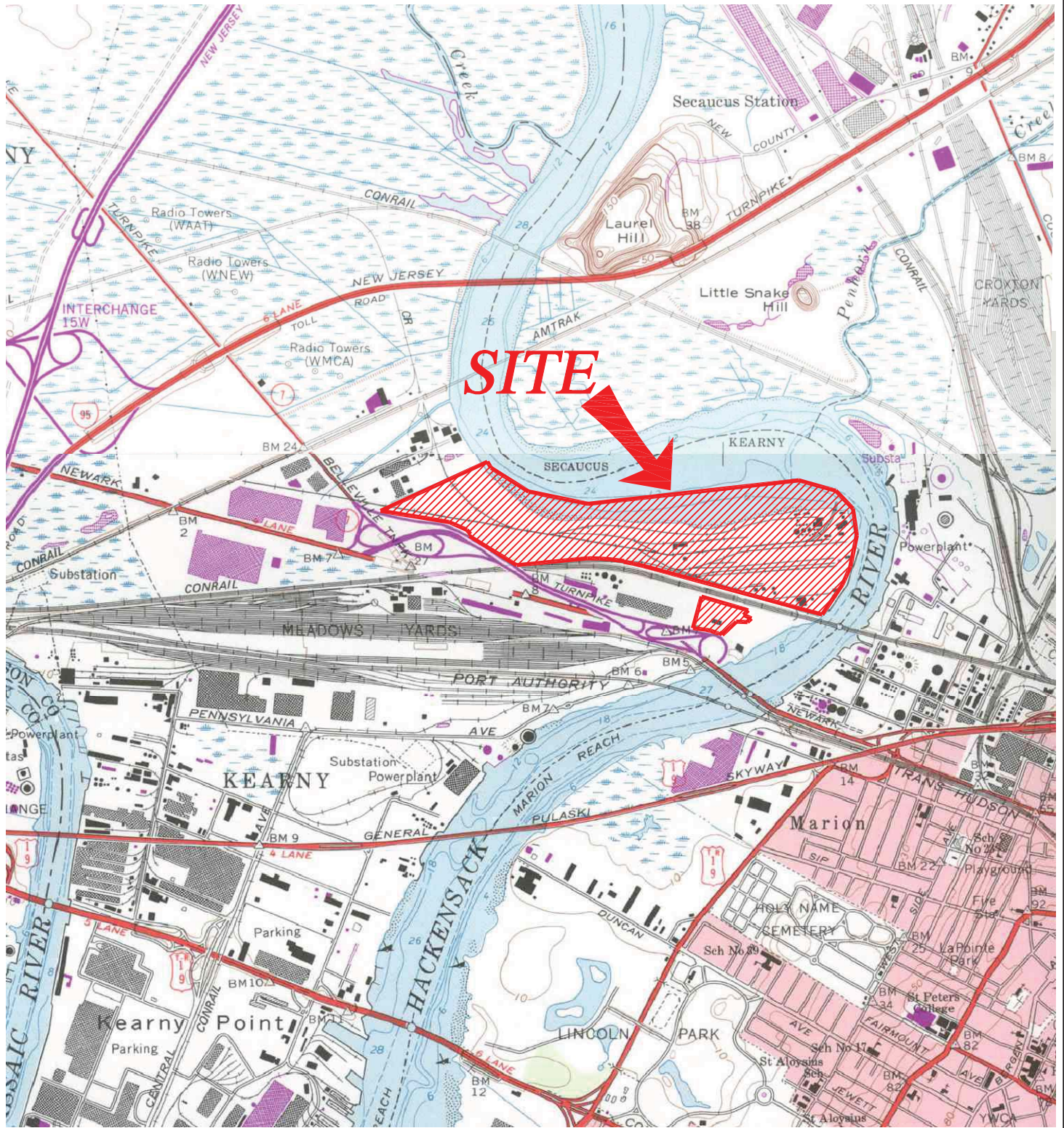
CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

EXHIBIT C

Figures

Figure 1-1	Site Location Map
Figure 1-2	Tax Map
Figure 2-1	Revised CEA boundary – East Side
Figure 2-2	Revised CEA boundary – West Side
Figures 3 - 10	Geologic Cross-Sections

KEY



NEW JERSEY



QUADRANGLE LOCATION



REFERENCES: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES OF JERSEY CITY, AND WEEHAWKEN, NJ-NY.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: GLC	DATE: 10/19/07
CHKD: AEB	DATE: 10/19/07
APPD: PWS	DATE: 10/19/07
SCALE:	AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

CEA / WRA
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

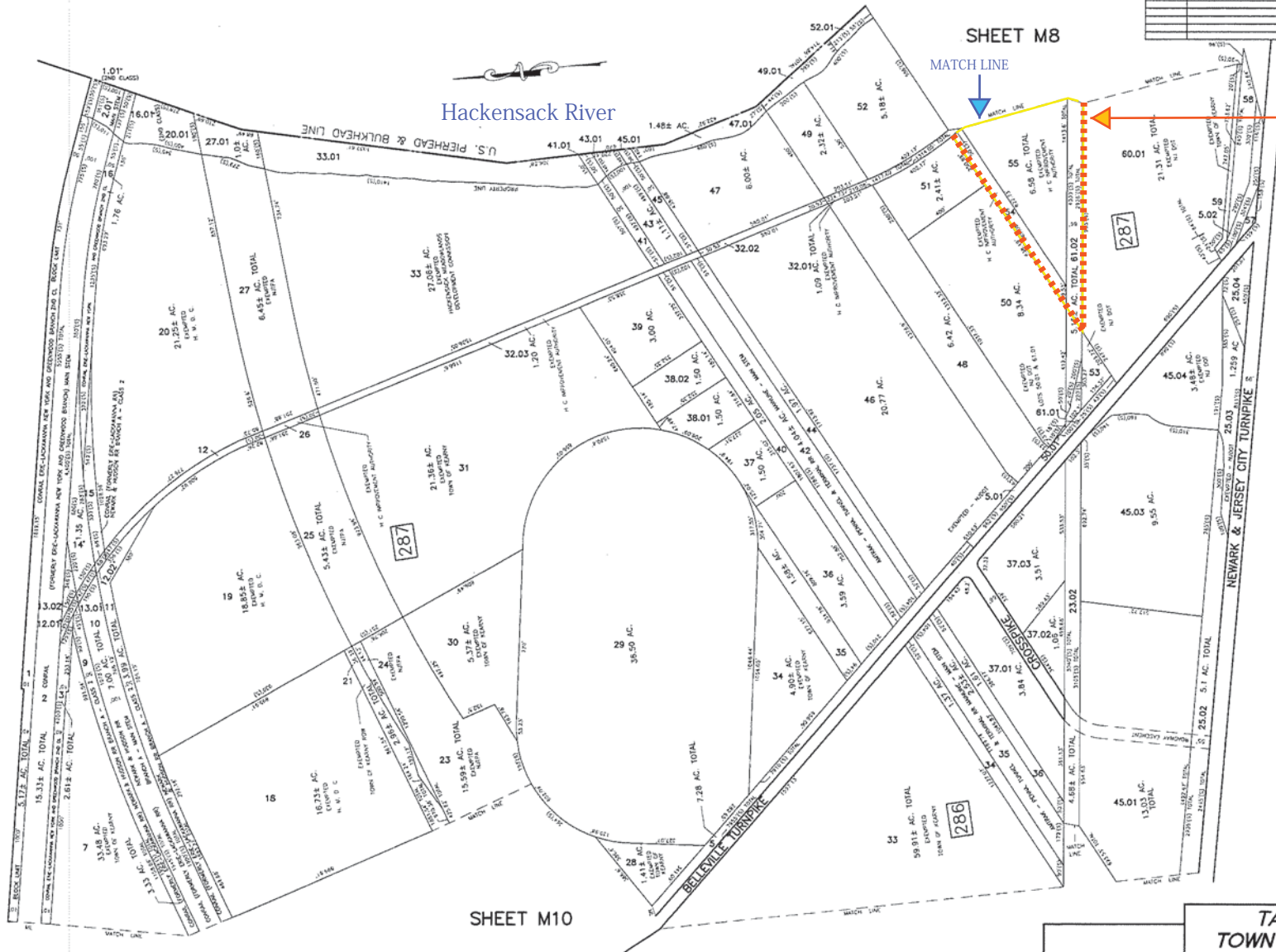
SITE LOCATION MAP

PROJECT NO: 06-365

FIGURE 1

REVISIONS				
DATE	BY	LOC. NO.	BLOCK	LOT
02/22/09	ANDREW W. BARNETT	1597	286	15

SHEET M13



Hackensack River

SHEET M8

MATCH LINE

Approximate
SITE Location

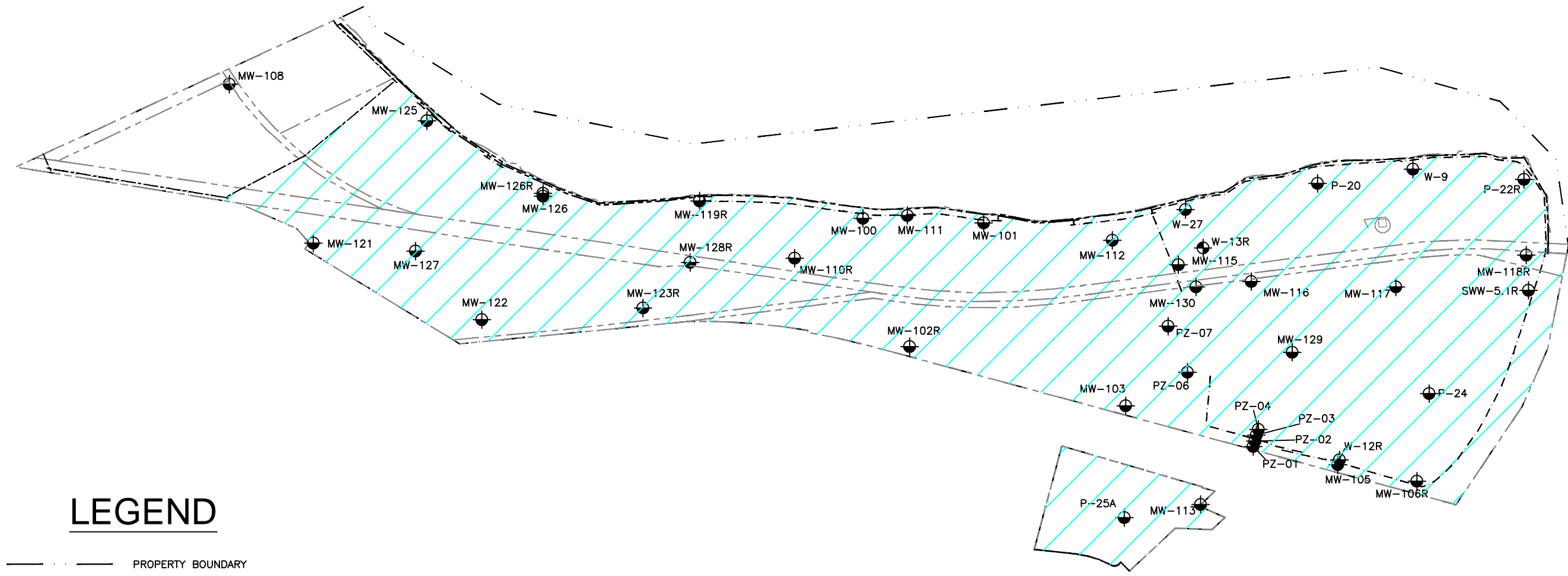
SHEET M10

SHEET M7

NOTE:
THIS SHEET WAS DRAWN USING COMPUTER
AIDED DRAFTING/DESIGN (CAD/DIGI)

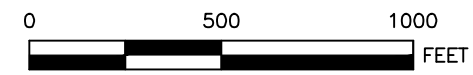
TAX MAP
TOWN OF KEARNY
HUDSON COUNTY, NEW
JERSEY SCALE: 1" = 200'
MICHAEL J. NEGLJA, P.E. P.L.S.
P.P.
34 PARK AVENUE, LYNHURST NEW JERSEY

CD# 24027973300 INFORMATION SHOWN IS COMPILED AS OF MARCH 2008. PRINTED MARCH 2008



LEGEND

- PROPERTY BOUNDARY
- SHALLOW ZONE MONITORING WELL LOCATION AND ID
- SLURRY WALL/PDM KEY LOCATION
- STEEL SHEET PILE BARRIER WALL LOCATION
- PROPOSED CEA BOUNDARY
- LOTS AND BLOCKS (APPROX.)
- STANDARD CHLORINE CHEMICAL COMPANY SLURRY WALL



BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 08/02/13
CHKD: VMV	DATE: 08/02/13
APPD: PWS	DATE: 08/02/13
SCALE:	AS SHOWN



REVISED CEA/WRA
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

CEA EAST BOUNDARY MAP

PROJECT NO: 08-637
FIGURE 2-1

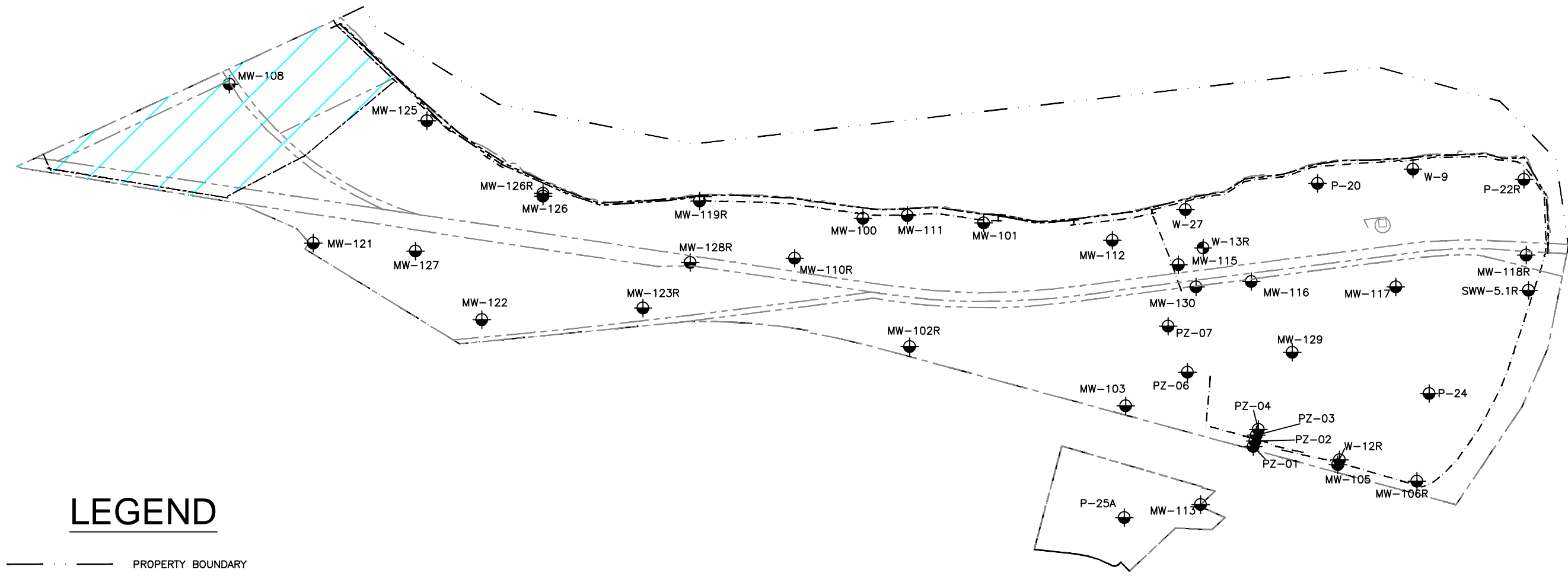
ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

6. TAX LOTS AND BLOCK 287, PROVIDED BY THE TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY, "TAX MAP TOWN OF KEARNY" DATED MARCH 2008.
7. NEW CB SLURRY WALL AT NAE ASBUILT LOCATIONS PER EFFLUENT ASBUILT DRAWING BY LAYOUR, INC. DATED OCTOBER 9, 2009.
8. NEW CB SLURRY WALL ALONG SSP WALL AS-BUILT PER SLURRY WALL AS-BUILT DRAWING BY LAYOUR INC., DATED MAY 18, 2010.
9. STANDARD CHLORINE SLURRY WALL PER SLURRY WALL AS-BUILT ALIGNMENT AND TOP ELEVATION DRAWING BY B&B HI-TECH SOLUTIONS, LLC DATED 7/7/2011.

- REFERENCES:
1. PROPERTY BOUNDARY PER PAULUS, SOKOLOWSKI, SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
2. TOPOGRAPHY AND PLANIMETRICS BY: PAULUS, SOKOLOWSKI, AND SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
3. ELEVATION REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
4. HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1983).
5. EXISTING SLURRY WALL LOCATION AND STEEL SHEET PILE WALL LOCATION PER SLURRY WALL AND SHEET PILE WALL LOCATION MAP BY CASEY & KELLER INC., DATED 12/12/98, LAST REVISED 1/5/2000 PLUS ADDITIONAL LOCATIONS PER MONITORING WELL LOCATION SKETCH BY GEOD CORPORATION DATED 4/11/2002.

y:\seaboard\08-637\dep cea-wra\cea (cod 2012 only)\figure 2-1.dwg Last Saved By: Soomer 8/6/2013 9:32 AM Plotted By: Shelly Comer 8/8/2013 2:31 PM Scale: 1:1



LEGEND

- PROPERTY BOUNDARY
- SHALLOW ZONE MONITORING WELL LOCATION AND ID
- SLURRY WALL/PDM KEY LOCATION
- STEEL SHEET PILE BARRIER WALL LOCATION
- PROPOSED CEA BOUNDARY
- LOTS AND BLOCKS (APPROX.)
- STANDARD CHLORINE CHEMICAL COMPANY SLURRY WALL



BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 08/02/13
CHKD: VMV	DATE: 08/02/13
APPD: PWS	DATE: 08/02/13
SCALE:	AS SHOWN



REVISED CEA/WRA
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

6. TAX LOTS AND BLOCK 287, PROVIDED BY THE TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY, "TAX MAP TOWN OF KEARNY" DATED MARCH 2008.
7. NEW CB SLURRY WALL AT NAE ASBUILT LOCATIONS PER EFFLUENT ASBUILT DRAWING BY LAYOUR, INC. DATED OCTOBER 9, 2009.
8. NEW CB SLURRY WALL ALONG SSP WALL AS-BUILT PER SLURRY WALL AS-BUILT DRAWING BY LAYOUR INC., DATED MAY 18, 2010.
9. STANDARD CHLORINE SLURRY WALL PER SLURRY WALL AS-BUILT ALIGNMENT AND TOP ELEVATION DRAWING BY B&B HI-TECH SOLUTIONS, LLC DATED 7/7/2011.

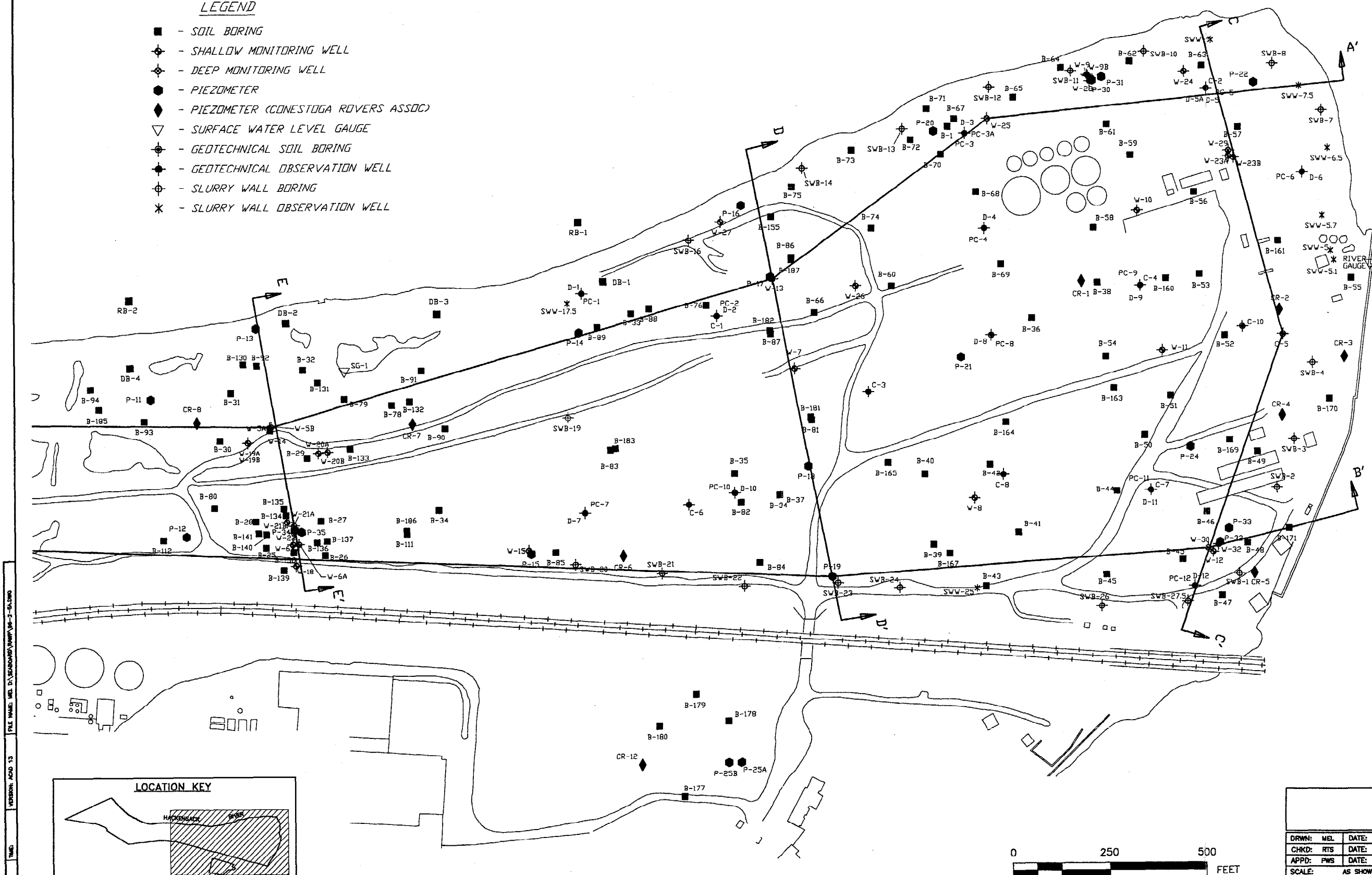
- REFERENCES:
1. PROPERTY BOUNDARY PER PAULUS, SOKOLOWSKI, SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
2. TOPOGRAPHY AND PLANIMETRICS BY: PAULUS, SOKOLOWSKI, AND SARTOR, CONSULTING ENGINEERS, AUGUST 1995.
3. ELEVATION REFERENCE NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929).
4. HORIZONTAL REFERENCE NEW JERSEY STATE PLANE COORDINATES (NAD 1983).
5. EXISTING SLURRY WALL LOCATION AND STEEL SHEET PILE WALL LOCATION PER SLURRY WALL AND SHEET PILE WALL LOCATION MAP BY CASEY & KELLER INC., DATED 12/12/98, LAST REVISED 1/5/2000 PLUS ADDITIONAL LOCATIONS PER MONITORING WELL LOCATION SKETCH BY GEOD CORPORATION DATED 4/11/2002.

REV #	DATE	DESCRIPTION	APPD

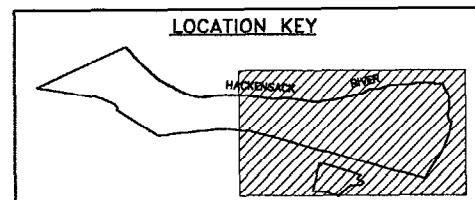
y:\seaboard\08-637\dep-cea-wa\cea (cod 2012 only)\figure 2-2.dwg Last Saved By: Soomer, 8/6/2013 9:16 AM Plotted By: Shelly Comer, 8/8/2013 2:30 PM Scale: 1:1

LEGEND

- - SOIL BORING
- ⊕ - SHALLOW MONITORING WELL
- ⊕ - DEEP MONITORING WELL
- - PIEZOMETER
- ◆ - PIEZOMETER (CONESTOGA ROVERS ASSOC)
- ▽ - SURFACE WATER LEVEL GAUGE
- ⊕ - GEOTECHNICAL SOIL BORING
- ⊕ - GEOTECHNICAL OBSERVATION WELL
- ⊕ - SLURRY WALL BORING
- * - SLURRY WALL OBSERVATION WELL



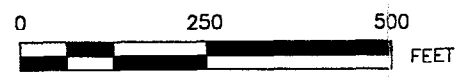
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 VERSION: 04/08/88
 DATE: 08/20/97
 TIME: 10:00
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 CHECKED BY: [initials]
 APP'D BY: [initials]

REFERENCE:
 KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II
 REMEDIAL INVESTIGATION REPORT; FIGURE 5-3.

REV	DATE	DESCRIPTION	APPRO
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2			



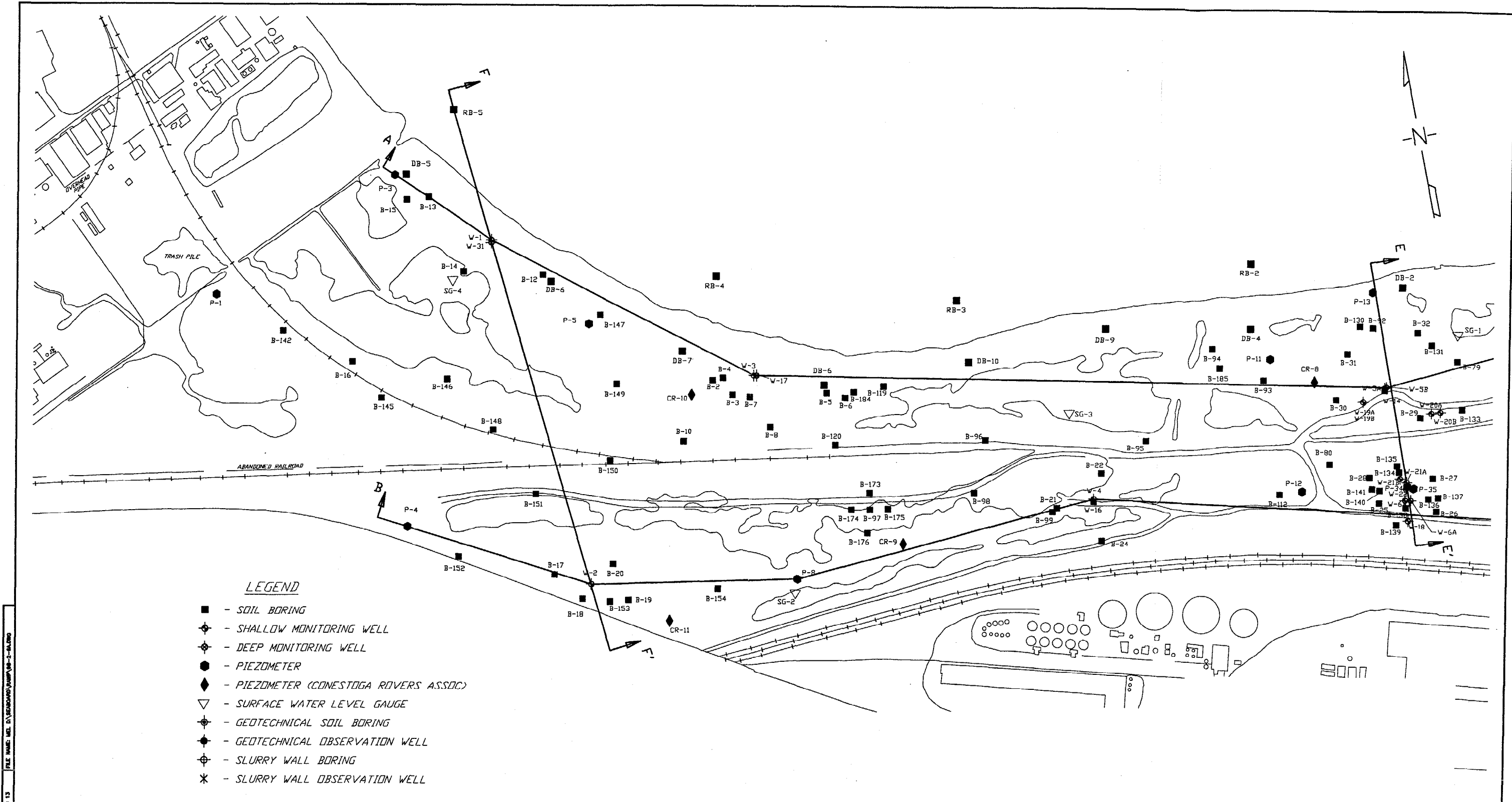
ECDC

DRWN: MEL	DATE: 08/20/97	KEY ENVIRONMENTAL INCORPORATED
CHKD: RTS	DATE: 08/20/97	
APPD: FWS	DATE: 08/20/97	
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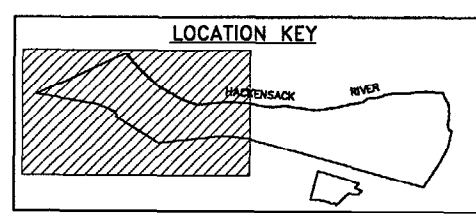
REMEDIAL ACTION WORK PLAN
 FORMER KOPPERS SEABOARD SITE
 KEARNY, NEW JERSEY

CROSS SECTION LOCATION MAP SEABOARD SITE - EASTERN HALF	DRAWING NUMBER 87353 FIGURE 3
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PREPARED FOR:
 ITX / ECDC
 ISSUE DATE:
 04/08/88
 ROSSLYN FARMS
 INDUSTRIAL PARK
 1200 ARCH ST., SUITE 200
 CARNEGIE, PA 15108



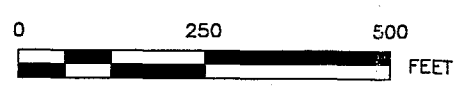
- LEGEND**
- - SOIL BORING
 - ⊕ - SHALLOW MONITORING WELL
 - ⊕ - DEEP MONITORING WELL
 - - PIEZOMETER
 - ◆ - PIEZOMETER (CONESTOGA RIVERS ASSOC)
 - ▽ - SURFACE WATER LEVEL GAUGE
 - ⊕ - GEOTECHNICAL SOIL BORING
 - ⊕ - GEOTECHNICAL OBSERVATION WELL
 - ⊕ - SLURRY WALL BORING
 - * - SLURRY WALL OBSERVATION WELL



DATE: 04/08/98
 TIME: 10:00 AM
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REV	DATE	DESCRIPTION	APPD
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3			

REFERENCE:
 KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II
 REMEDIAL INVESTIGATION REPORT; FIGURE 5-3.

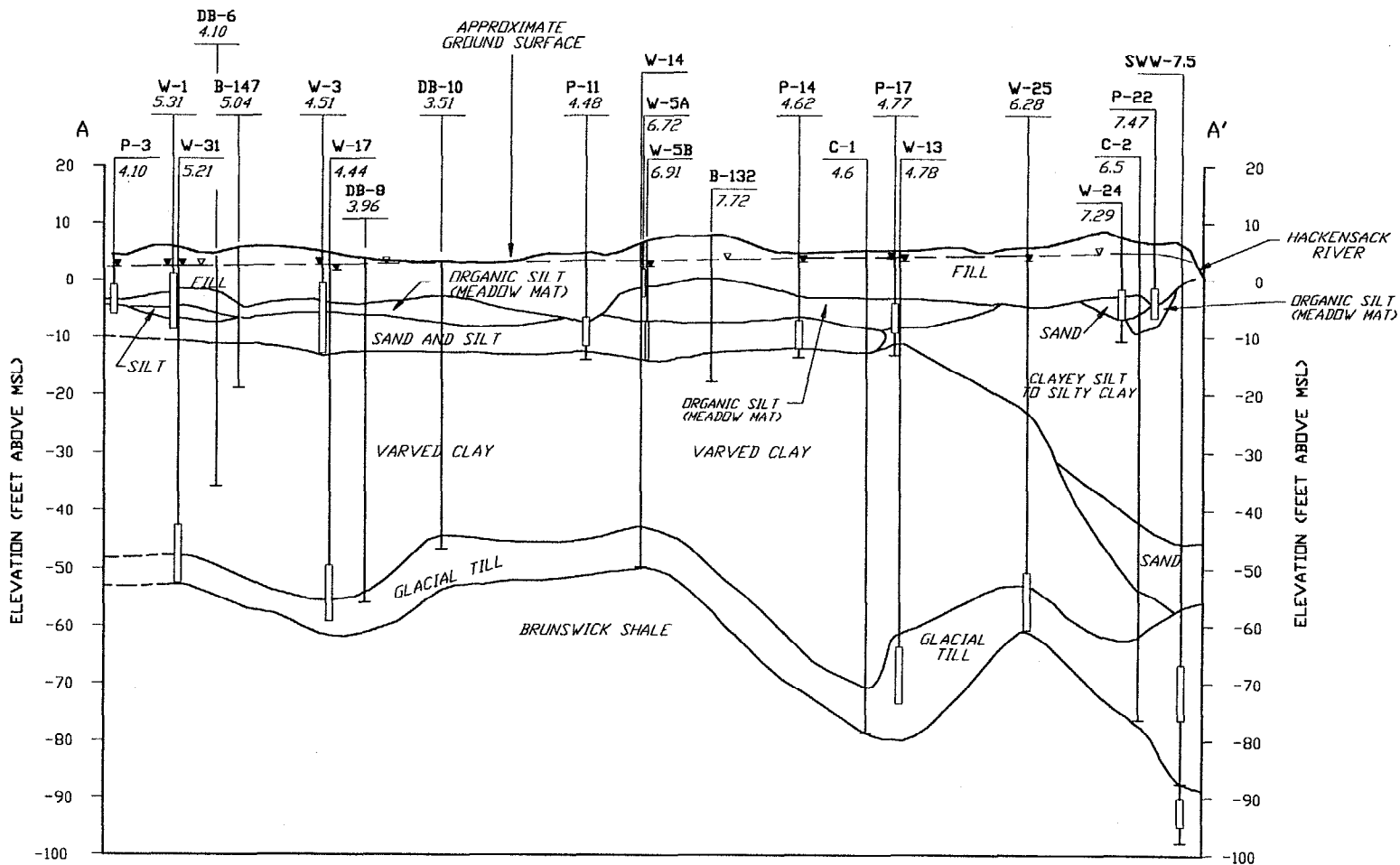


PREPARED FOR:
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 04/08/98

ROSSLYN FARMS
 INDUSTRIAL PARK
 1200 ARCH ST., SUITE 200
 CARNEGIE, PA 15106

ECDC	
DRWN: MEL	DATE: 08/20/97
CHKD: RTS	DATE: 08/20/97
APPD: PWS	DATE: 08/20/97
SCALE: AS SHOWN	
REMEDIAL ACTION WORK PLAN FORMER KOPPERS SEABOARD SITE KEARNY, NEW JERSEY	
CROSS SECTION LOCATION MAP SEABOARD SITE - WESTERN HALF	DRAWING NUMBER 07355 FIGURE 4



LEGEND

- P-4 - WELL OR BORING DESIGNATION
 5.14 - GROUND SURFACE ELEVATION
 - WELL SCREEN INTERVAL
 - STATIC WATER LEVEL
 - APPROXIMATE WATER TABLE CONFIGURATION

NOTES:

- LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
- WATER LEVEL MEASURED APRIL 21, 1987
- BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
- THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

HORIZONTAL SCALE (FEET)



30X VERTICAL EXAGGERATION

ECDC

DRWN: MEL DATE: 08/22/97

CHKD: RTS DATE: 08/22/97

APPD: PWS DATE: 08/22/97

SCALE: AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

REMEDIAL ACTION WORK PLAN
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II
REMEDIAL INVESTIGATION REPORT; FIGURE 5-4.

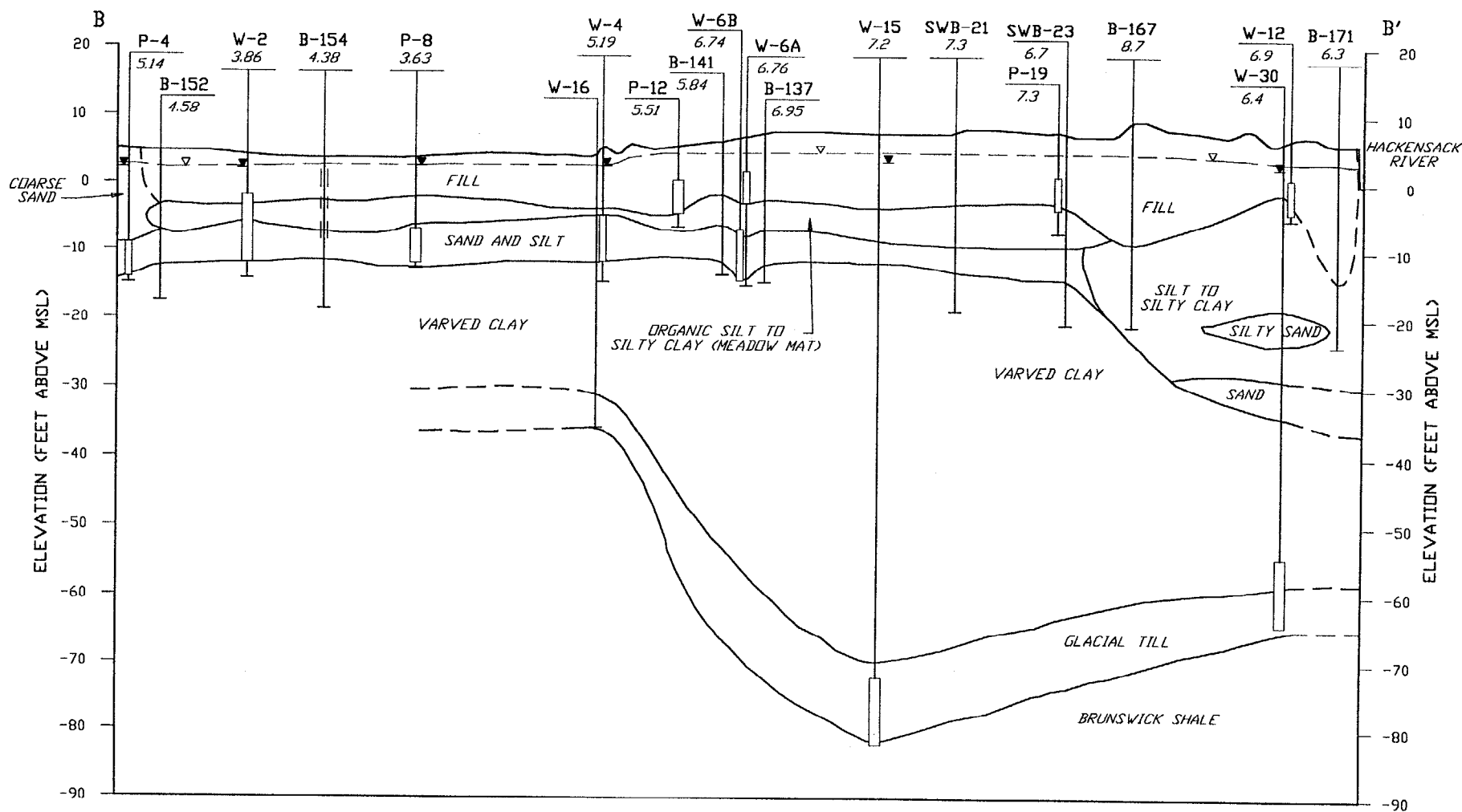
PREPARED FOR:
ITEX / ECDC

ISSUE DATE:
04/06/98

ROSSLYN FARMS
INDUSTRIAL PARK
1200 ARCH ST., SUITE 200
CARNEGIE, PA 15106

GEOLOGIC CROSS SECTION A-A'

DRAWING NUMBER
97355
FIGURE 5



LEGEND

- P-4 - WELL OR BORING DESIGNATION
- 5.14 - GROUND SURFACE ELEVATION
- - WELL SCREEN INTERVAL
- ▽ - STATIC WATER LEVEL
- - APPROXIMATE WATER TABLE CONFIGURATION

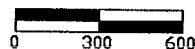
NOTES:

1. LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
2. WATER LEVEL MEASURED APRIL 21, 1987
3. BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
4. THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II REMEDIAL INVESTIGATION REPORT; FIGURE 5-5.

HORIZONTAL SCALE (FEET)



30X VERTICAL EXAGGERATION

ECDC

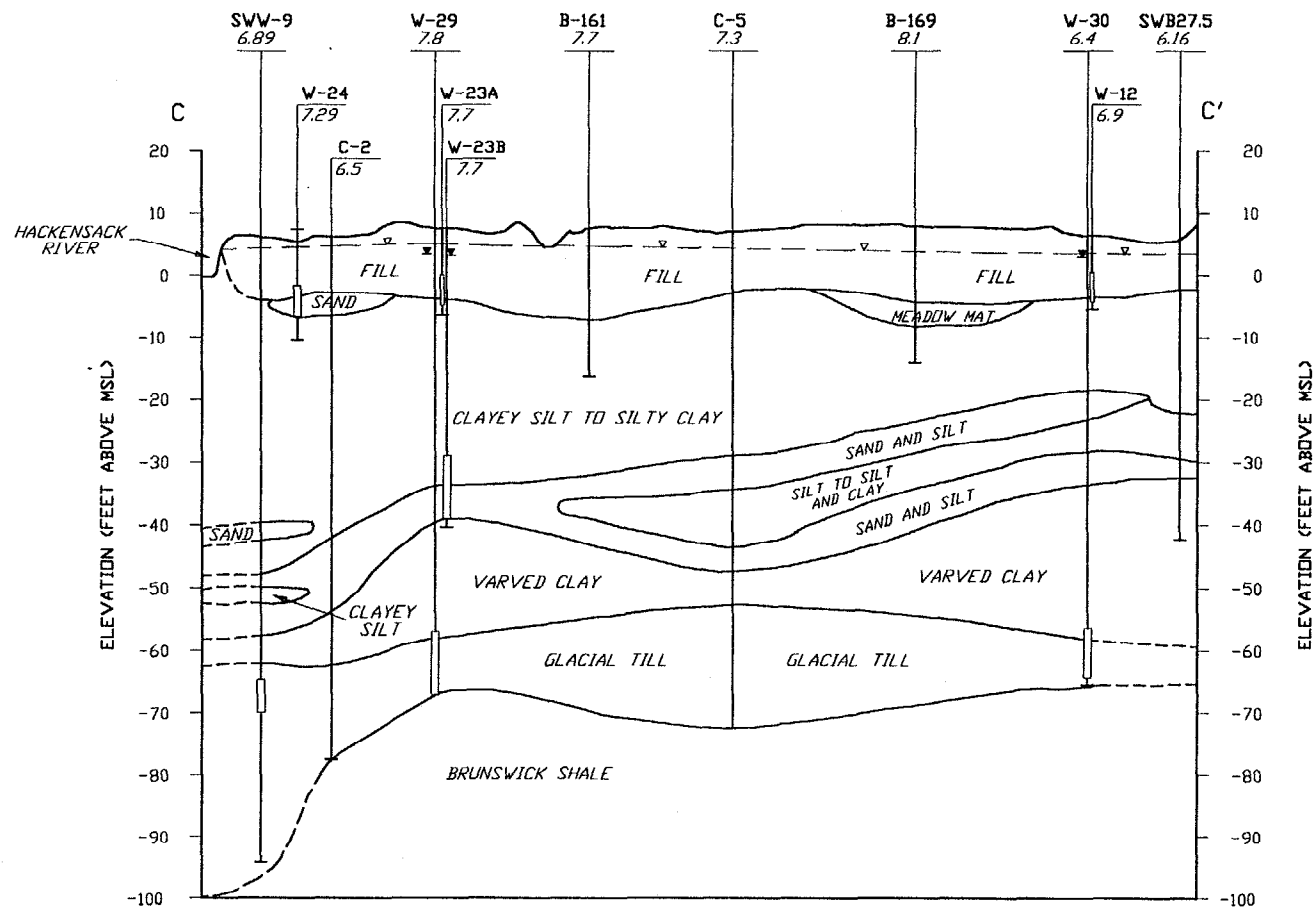
DRWN: MEL DATE: 08/22/87
CHKD: RTS DATE: 08/22/87
APPD: PWS DATE: 08/22/87
SCALE: AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

REMEDIAL ACTION WORK PLAN
KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

GEOLOGIC CROSS SECTION B-B'

DRAWING NUMBER
97355
FIGURE 6



LEGEND

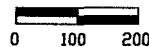
SWW-9 - WELL OR BORING DESIGNATION
6.89 - GROUND SURFACE ELEVATION

- WELL SCREEN INTERVAL

- STATIC WATER LEVEL

- APPROXIMATE WATER TABLE CONFIGURATION

HORIZONTAL SCALE (FEET)



10X VERTICAL EXAGGERATION

NOTES:

- LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
- WATER LEVEL MEASURED APRIL 21, 1987
- BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
- THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II
REMEDIAL INVESTIGATION REPORT; FIGURE 5-6.

PREPARED FOR:
ITEX / ECDC

ISSUE DATE:
04/06/98

ROSSLYN FARMS
INDUSTRIAL PARK
1200 ARCH ST., SUITE 200
CARNEGIE, PA 15106

ECDC

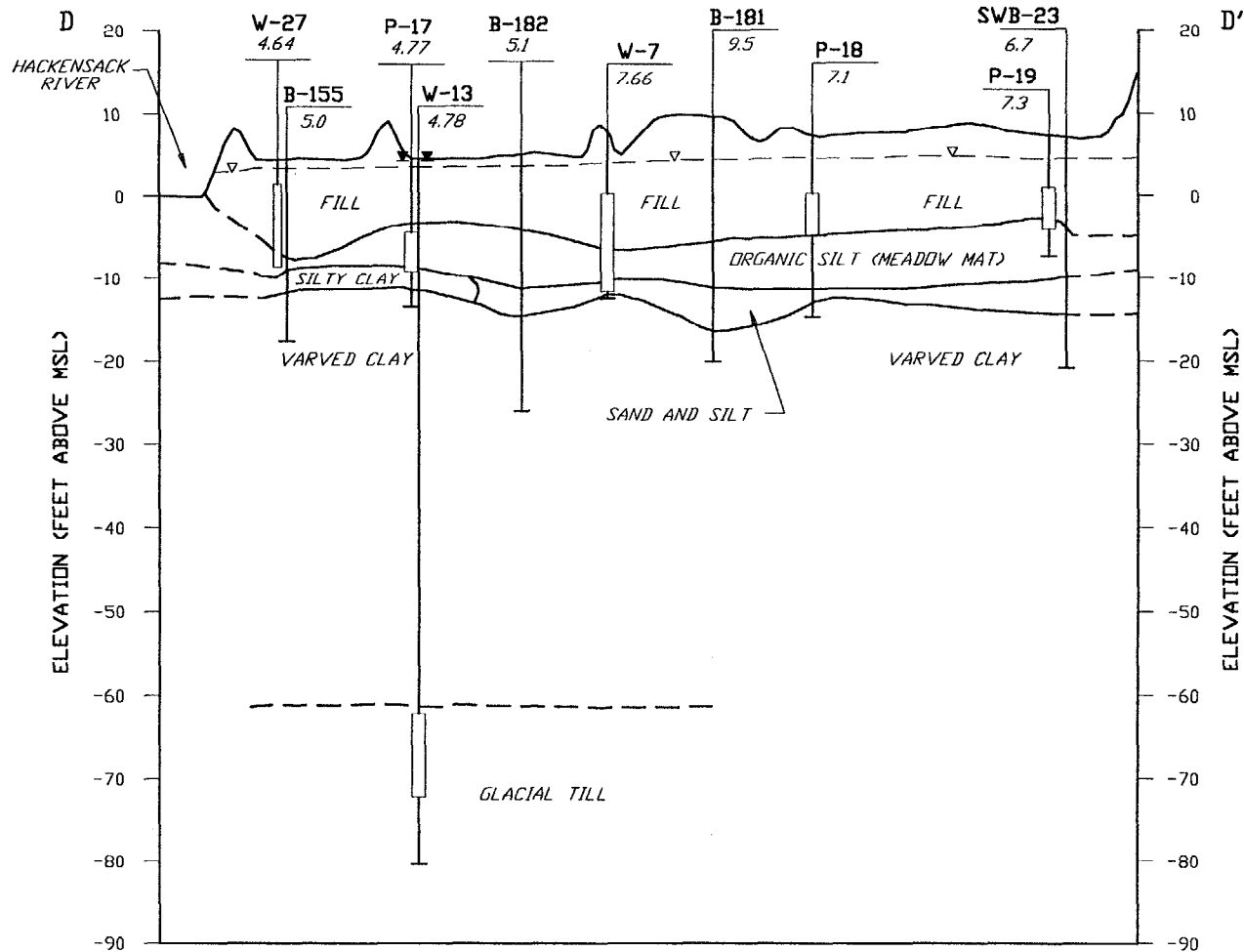
DRWN: MEL	DATE: 08/22/87
CHKD: RTS	DATE: 09/22/87
APPD: PWS	DATE: 09/22/87
SCALE: AS SHOWN	

KEY ENVIRONMENTAL
INCORPORATED

REMEDIAL ACTION WORK PLAN
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

GEOLOGIC CROSS SECTION C-C'

DRAWING NUMBER
97355
FIGURE 7



LEGEND

W-27 - WELL OR BORING DESIGNATION

4.64 - GROUND SURFACE ELEVATION

— - WELL SCREEN INTERVAL

▽ - STATIC WATER LEVEL

— - APPROXIMATE WATER TABLE CONFIGURATION

NOTES:

1. LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
2. WATER LEVEL MEASURED APRIL 21, 1987
3. BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
4. THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

HORIZONTAL SCALE (FEET)



10X VERTICAL EXAGGERATION

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II REMEDIAL INVESTIGATION REPORT; FIGURE 5-7.

PREPARED FOR:
ITEX / ECDC

ISSUE DATE:
04/06/98

ROSSLYN FARMS
INDUSTRIAL PARK
1200 ARCH ST., SUITE 200
CARNEGIE, PA 15106

ECDC

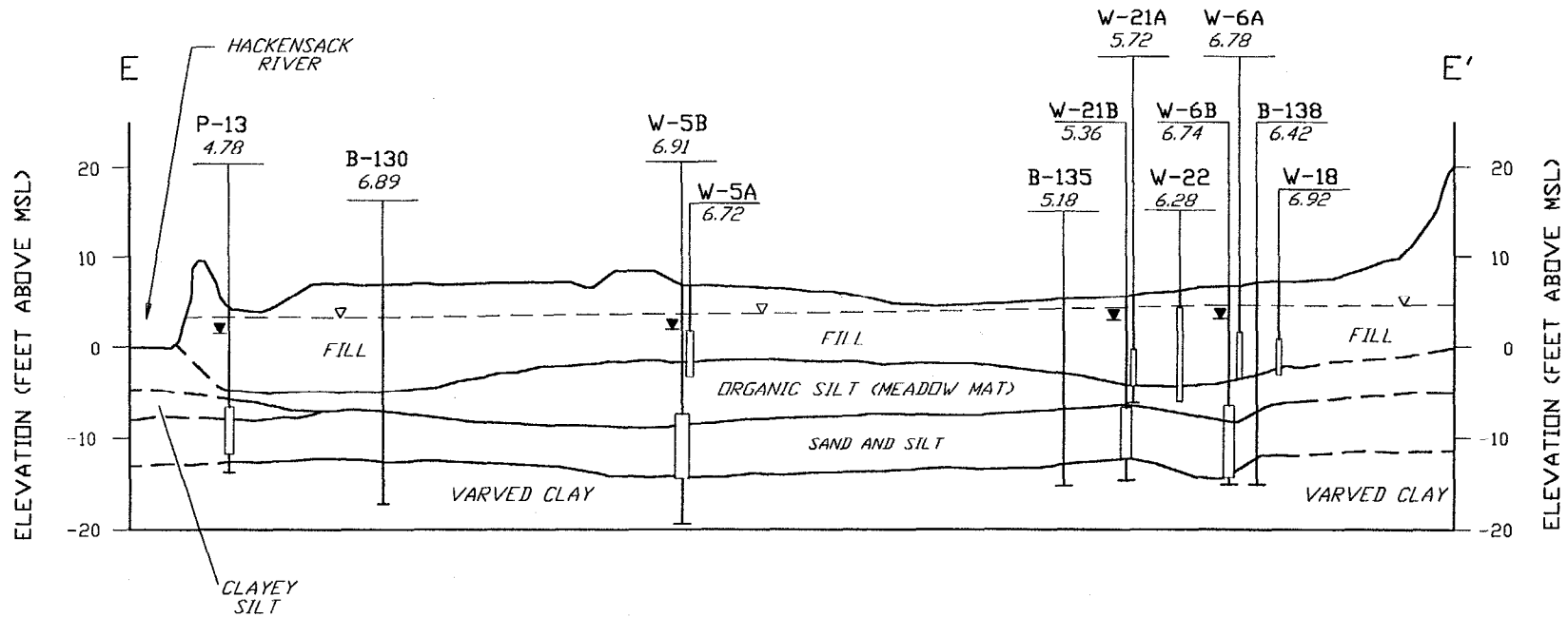
DRWN: MEL	DATE: 08/22/97
CHKD: RTS	DATE: 08/22/97
APPD: PWS	DATE: 08/22/97
SCALE: AS SHOWN	

KEY ENVIRONMENTAL
INCORPORATED




REMEDIAL ACTION WORK PLAN
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

GEOLOGIC CROSS SECTION D-D'

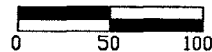
DRAWING NUMBER
97355
FIGURE 8



LEGEND

- P-13 - WELL OR BORING DESIGNATION
- 4.78 - GROUND SURFACE ELEVATION
-  - WELL SCREEN INTERVAL
-  - STATIC WATER LEVEL
-  - APPROXIMATE WATER TABLE CONFIGURATION

HORIZONTAL SCALE (FEET)



5X VERTICAL EXAGGERATION

- NOTES:
- LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
 - WATER LEVEL MEASURED APRIL 21, 1987
 - BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
 - THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II REMEDIAL INVESTIGATION REPORT; FIGURE 5-8.

PREPARED FOR:
ITECH / ECDC

ISSUE DATE:
04/06/98

ROSSLYN FARMS
INDUSTRIAL PARK
1200 ARCH ST., SUITE 200
CARNEGIE, PA 15106

ECDC

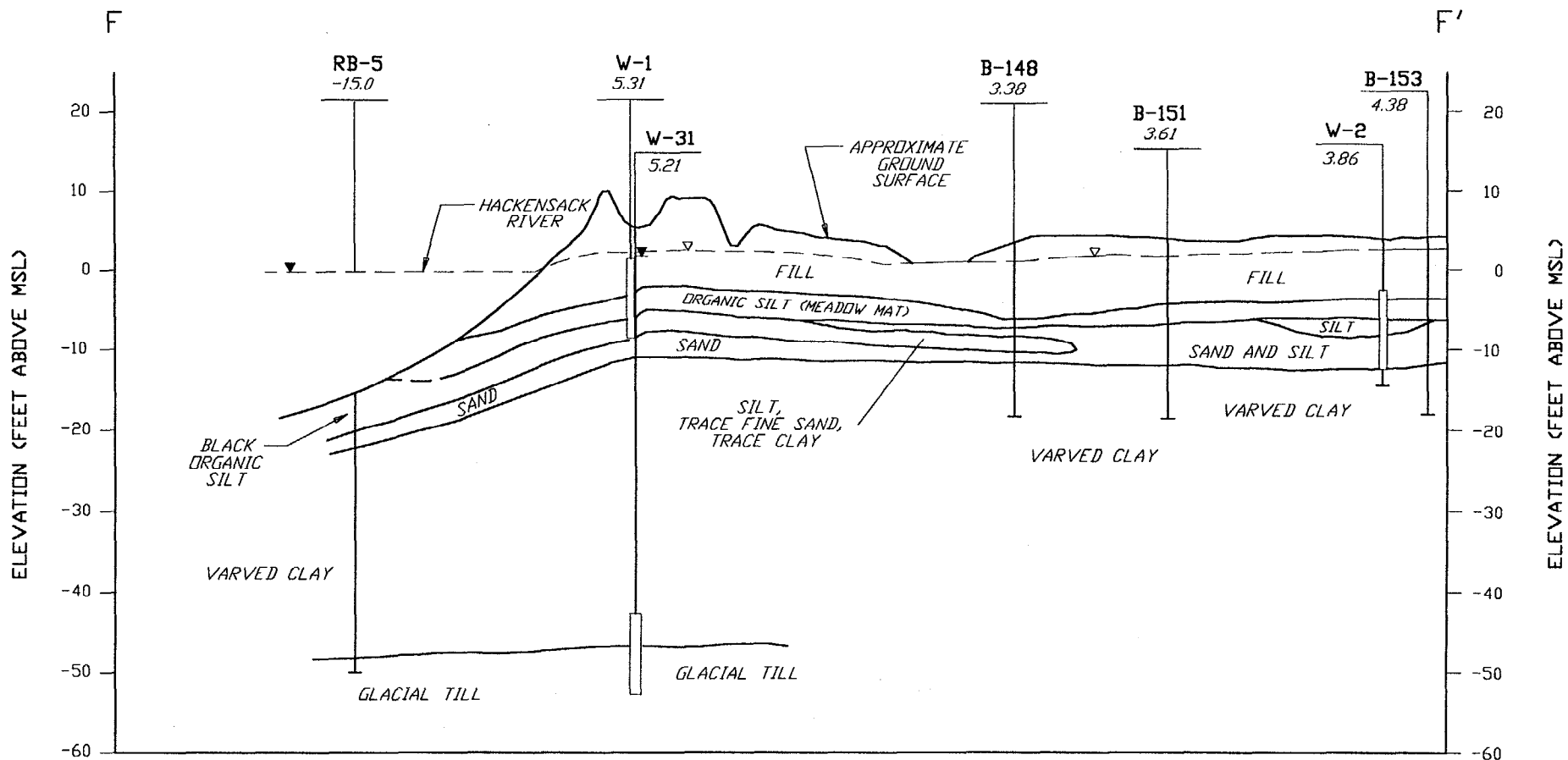
DRWN: MEL DATE: 08/22/97
CHKD: RTS DATE: 08/22/97
APPD: PWS DATE: 08/22/97
SCALE: AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

REMEDIAL ACTION WORK PLAN
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

GEOLOGIC CROSS SECTION E-E'

DRAWING NUMBER
87355
FIGURE 9



LEGEND

- W-1 - WELL OR BORING DESIGNATION
 5.31 - GROUND SURFACE ELEVATION
 - WELL SCREEN INTERVAL
 - STATIC WATER LEVEL
 - APPROXIMATE WATER TABLE CONFIGURATION

NOTES:

- LITHOLOGIC BOUNDARIES DASHED WHERE INFERRED
- WATER LEVEL MEASURED APRIL 21, 1987
- BORINGS SHOWN WHICH ARE NOT LOCATED ON THE LINE OF SECTION WERE PROJECTED PERPENDICULAR TO THE LINE OF SECTION
- THIS CROSS SECTION DEPICTS GEOLOGIC CONDITIONS AT SPECIFIC LOCATIONS BASED ON SITE INVESTIGATIONS. GEOLOGIC CONDITIONS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE SITES.

HORIZONTAL SCALE (FEET)



10X VERTICAL EXAGGERATION

REFERENCE:

KEYSTONE ENVIRONMENTAL RESOURCES, INC., JULY 1988, REVISED PHASE II REMEDIAL INVESTIGATION REPORT; FIGURE 5-9.

PREPARED FOR:
ITEC / ECDC

ISSUE DATE:
04/06/88

ROSSLYN FARMS
INDUSTRIAL PARK
1200 ARCH ST., SUITE 200
CARNEGIE, PA 15106

ECDC

DRWN: MEL DATE: 08/22/87
 CHKD: RTS DATE: 08/22/87
 APPD: PWS DATE: 08/22/87
 SCALE: AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

REMEDIAL ACTION WORK PLAN
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

GEOLOGIC CROSS SECTION F-F'

DRAWING NUMBER
97355
FIGURE 10

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT D
GIS Deliverables**

- D-1** Vertical Contaminant Data Table
- D-2** Groundwater Monitoring Plan Table
- D-3** CD [Excel and AutoCAD Files provided to DEP]

KEY

Vertical Contaminant Data Table
Former Koppers Seaboard Site, Kearny NJ

Permit_Number	Owners_Number	Construction	Sentinel	Source	Downgradient	Width	Cross_Sec tion	Additional_Data	TOC_to_g roundsurf ace_in_in ches	TOC_Survey_ MeanSeaLevel	TOC_to_static _water_befor e_purge	Date_of_static_wa ter_measurement	Cleanwate r_lens_thic kness_if_k nown	Highest_Cont amination	X	Y	Geo_For mation_D esc	Water_Be aring_Zon e	Depth_of_con taminants	Flow Direction Prevailing	Comment
P200804231	MW-100	stick up	No	No	No	No	No			11.87	4.74	1/29/2013			606535.0733	697355.4473	Fill	Fill	17.72	SSW	Shallow GW flows S to SW due to cutoff wall.
P200804227	MW-101	stick up	No	No	No	No	No			13.61	6.34	1/29/2013			607065.8433	697334.8728	Fill	Fill	19.70	SSW	
P200804228	MW-102R	stick up	Yes	No	Yes	Yes	No			13.75	7.73	1/29/2013		No	606740.1933	696791.7273	Fill	Fill	17.97	SSW	
P200804229	MW-103	stick up	Yes	No	Yes	Yes	No			13.59	7.50	1/29/2013		No	607689.1633	696531.8573	Fill	Fill	19.71	SSW	
26-47925	MW-105	stick up	No	No	Yes	Yes	No			10.17	4.22	1/29/2013			608620.2133	696272.6973	Fill	Fill	13.68	SSW	
E200906681	MW-106R	stick up	No	No	Yes	Yes	No			11.72	5.64	1/29/2013		Yes	608967.7633	696200.0557	Fill	Fill	12.29	SSW	
P200804230	MW-108	stick up	No	No	No	Yes	No			11.21				Yes	603752.32	697946.399	Fill	Fill	16.01	SSW	
P200902854	MW-110R	stick up	No	No	No	No	No			12.12	5.52	1/29/2013		Yes	606235.3533	697180.2873	Fill	Fill	16.58	SSW	
P200804232	MW-111	stick up	No	No	No	Yes	No			13.45	5.93	1/29/2013			606730.0833	697368.3573	Fill	Fill	17.60	SSW	
P200804233	MW-112	stick up	No	No	No	No	No			21.49	13.76	1/29/2013		No	607630.8633	697259.3573	Fill	Fill	25.63	SSW	
26-51240	MW-113	stick up	Yes	No	Yes	No	No			10.96	6.98	1/29/2013		No	608018.3233	696097.9673	Fill	Fill	20.65	SSW	
P200804320	MW-115	stick up	No	No	No	No	No			21.55	12.29	1/29/2013		Yes	607921.3533	697150.9873	Fill	Fill	27.88	SSW	
P200804321	MW-116	stick up	No	No	No	No	No			19.81	12.86	1/29/2013		No	608240.7533	697077.6073	Fill	Fill	23.83	SSW	
26-51242	MW-117	stick up	No	No	No	No	No			18.54	11.83	1/29/2013		No	608876.3121	697054.5071	Fill	Fill	27.86	SSW	
P200804322	MW-118R	stick up	No	No	No	Yes	No			14.25	7.78	1/29/2013		Yes	609448.6533	697193.3873	Fill	Fill	20.08	SSW	
P200804319	MW-119R	stick up	No	No	No	Yes	No			11.46	6.37	1/29/2013		No	605818.3533	697431.2873	Fill	Fill	14.82	SSW	
P200804223	MW-121	stick up	No	No	Yes	Yes	No			10.24	8.28	1/29/2013		No	604122.3533	697246.1873	Fill	Fill	14.91	SSW	
P200804222	MW-122	stick up	No	No	Yes	Yes	No			20.07	17.03	1/29/2013		No	604861.5933	696909.6073	Fill	Fill	24.09	SSW	
P200801912	MW-123R	stick up	No	No	Yes	Yes	No			16.50	12.49	1/29/2013		No	605569.9933	696961.1073	Fill	Fill	21.20	SSW	
26-51243	MW-124	stick up	No	No	No	No	No			15.13	9.11	1/29/2013		Yes	696272.6973	696536.4673	Fill	Fill	24.61	SSW	
P200804225	MW-125	stick up	No	No	Yes	Yes	No			14.64	9.07	1/29/2013			604621.1733	697784.0573	Fill	Fill	17.49	SSW	
P200804224	MW-126R	stick up	No	No	No	No	No			12.40	6.79	1/29/2013			605130.3	697465.4	Fill	Fill	12.63	SSW	
P200804226	MW-127	stick up	No	No	No	No	No			17.22	14.63	1/29/2013			604570.3533	697211.2873	Fill	Fill	21.49	SSW	
P200801913	MW-128R	stick up	No	No	No	No	No			15.88	9.49	1/29/2013			605777.3533	697161.2873	Fill	Fill	19.44	SSW	
26-51244	MW-129	stick up	No	No	No	No	No			17.36	11.20	1/29/2013		No	608420.2133	696766.9873	Fill	Fill	20.84	SSW	
P200804323	MW-130	stick up	No	No	No	No	No			19.96	13.07	1/29/2013		No	607997.6433	697054.1273	Fill	Fill	24.08	SSW	
26-8872-0	P-20	stick up	No	Yes	No	Yes	No			13.39	6.61	1/29/2013		Yes	608531.8933	697508.9173	Fill	Fill	23.70	SSW	
P200804324	P-22R	stick up	No	Yes	No	Yes	Yes			13.26	6.71	1/29/2013			609438.0233	697526.6373	Fill	Fill	19.24	SSW	
26-8886-0	P-24	stick up	No	No	No	No	No			13.58	7.44	1/29/2013		Yes	609021.5833	696585.3373	Fill	Fill	22.25	SSW	
26-08954-8	P-25A	stick up	Yes	No	Yes	Yes	No			8.47	4.06	1/29/2013		No	607683.1633	696039.9773	Fill	Fill	11.78	SSW	
E200908693	PZ-01	stick up	No	No	Yes	No	No			9.70	3.84	1/29/2013			608249.5507	696352.5971	Fill	Fill	12.15	SSW	
E200908694	PZ-02	stick up	No	No	No	No	No			11.83	6.00	1/29/2013			608257.6359	696376.6641	Fill	Fill	14.71	SSW	
E200908695	PZ-03	stick up	No	No	No	No	No			11.43	5.38	1/29/2013			608263.3226	696402.9115	Fill	Fill	15.23	SSW	
E200908696	PZ-04	stick up	No	No	No	No	No			12.86	6.92	1/29/2013			608271.8847	696427.5095	Fill	Fill	15.85	SSW	
E200908698	PZ-06	stick up	No	No	No	No	No			18.45	12.39	1/29/2013			607960.8963	696679.0537	Fill	Fill	21.18	SSW	
E200908699	PZ-07	stick up	No	No	No	No	No			19.73	13.53	1/29/2013			607875.4584	696881.3334	Fill	Fill	22.57	SSW	
	SWW-5.1R	stick up	No	No	No	No	No			11.50	4.89	1/29/2013			609458.4833	697038.7973	Fill	Fill	13.81	SSW	
26-8851	W-9	stick up	No	Yes	No	Yes	No			14.06	7.10	1/29/2013		Yes	608950.9256	697571.1278	Fill	Fill	21.24	SSW	
	W-12R	stick up	Yes	No	Yes	No	Yes			10.52	3.97	1/29/2013		No	608623.665	696285.364	Fill	Fill	11.66	SSW	
26-10162	W-27	stick up	No	Yes	No	Yes	Yes			13.93	8.03	1/29/2013		Yes	607951.6933	697394.2573	Fill	Fill	23.51	SSW	

Notes:

1. Information associated with static water level based on observations/measurements conducted in Jan 2013 as part of 1st quarter 2013 quarterly groundwater monitoring.
2. Information provided on well type based on professional judgement and/or data available.
3. Highest contamination present in well is based on data available for wells from last 24 months for contaminants exceeding the applicable groundwater quality criteria and/or based on professional judgement.
4. Prevailing groundwater flow direction provided for shallow zone for one well due to a large CEA.
5. Approximate total depth of wells included in place of depth of groundwater contaminants and do no necessarily mean presence of contamination at the specified depths.
6. X - NJ State Plane coordinate easting, Y - NJ State Plane coordinate northing

Ground Water Monitoring Plan for Ground Water**Remedial Action Permit** (version 1.0; May 17, 2012)**INSTRUCTIONS**

Case Name: NJD00244512
Program Interest (PI) ID #: G000001985
Spreadsheet Submission Date: 8/12/2013

RESET DATA**PRINT**

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
GAC-ADS-01	Sentinel	608142.7	696430.92	Semi-annually	Other	Base Neutrals	NA
GAC-ADS-02	Sentinel	608225.79	696407.38	Semi-annually	Other	Base Neutrals	NA
GAC-ADS-03	Sentinel	608302.47	696386.33	Semi-annually	Other	Base Neutrals	NA
MW-102R	Sentinel	606740.19	696791.73	Semi-annually	Other	Base Neutrals	NA
MW-103	Sentinel	607689.16	696531.86	Semi-annually	Other	Base Neutrals	NA
MW-106R	Plume fringe	608967.76	696200.06	Semi-annually	Other	Base Neutrals	NA
MW-110R	Plume fringe	606235.35	697180.29	Yearly	Other	Base Neutrals	NA
MW-112	Plume	607630.86	697259.36	Yearly	Other	Base Neutrals	NA
MW-113	Sentinel	608018.32	696097.97	Semi-annually	Other	Base Neutrals	NA
MW-116	Plume sampling point	608240.75	697077.61	Yearly	Other	Base Neutrals	NA
MW-117	Plume sampling point	608876.31	697054.51	Yearly	Other	Base Neutrals	NA
MW-118R	Plume sampling point	609448.65	697193.39	Yearly	Other	Base Neutrals	NA
MW-119R	Plume fringe	605818.35	697431.29	Yearly	Other	Base Neutrals	NA
MW-121	Plume fringe	604122.35	697246.19	Yearly	Other	Base Neutrals	NA
MW-122	Plume fringe	604861.59	696909.61	Yearly	Other	Base Neutrals	NA
MW-123R	Plume fringe	605569.99	696961.11	Yearly	Other	Base Neutrals	NA
MW-124	Plume fringe	696272.7	696536.47	Yearly	Other	Base Neutrals	NA
MW-129	Plume fringe	608420.21	696766.99	Yearly	Other	Base Neutrals	NA
MW-130	Plume sampling point	607997.64	697054.13	Yearly	Other	Base Neutrals	NA
P-24	Plume fringe	609021.58	696585.34	Yearly	Other	Base Neutrals	NA
P-25A	Sentinel	607683.16	696039.98	Yearly	Other	Base Neutrals	NA
W-12R	Sentinel	608623.67	696285.36	Semi-annually	Other	Base Neutrals	NA
C-3	Sentinel	608236.24	696891.95	Yearly	Other	Base Neutrals	NA
W-17	Sentinel	605059.08	697476	Yearly	Other	Base Neutrals	NA
W-30R	Sentinel	608919.35	696214.59	Yearly	Other	Base Neutrals	NA
W-31	Sentinel	604428.77	697961.15	Yearly	Other	Base Neutrals	NA
GAC-ADS-01	Sentinel	608142.7	696430.92	Semi-annually	Other	Cyanide (free Cyanide)	NA

Ground Water Monitoring Plan for Ground Water**Remedial Action Permit** (version 1.0; May 17, 2012)**INSTRUCTIONS**

Case Name: NJD00244512
 Program Interest (PI) ID #: G000001985
 Spreadsheet Submission Date: 8/12/2013

RESET DATA**PRINT**

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
GAC-ADS-02	Sentinel	608225.79	696407.38	Semi-annually	Other	Cyanide (free Cyanide)	NA
GAC-ADS-03	Sentinel	608302.47	696386.33	Semi-annually	Other	Cyanide (free Cyanide)	NA
MW-102R	Sentinel	606740.19	696791.73	Semi-annually	Other	Cyanide (free Cyanide)	NA
MW-103	Sentinel	607689.16	696531.86	Semi-annually	Other	Cyanide (free Cyanide)	NA
MW-106R	Plume fringe	608967.76	696200.06	Semi-annually	Other	Cyanide (free Cyanide)	NA
MW-110R	Plume fringe	606235.35	697180.29	Yearly	Other	Cyanide (free Cyanide)	NA
MW-112	Plume fringe	607630.86	697259.36	Yearly	Other	Cyanide (free Cyanide)	NA
MW-113	Sentinel	608018.32	696097.97	Semi-annually	Other	Cyanide (free Cyanide)	NA
MW-116	Plume sampling point	608240.75	697077.61	Yearly	Other	Cyanide (free Cyanide)	NA
MW-117	Plume sampling point	608876.31	697054.51	Yearly	Other	Cyanide (free Cyanide)	NA
MW-118R	Plume sampling point	609448.65	697193.39	Yearly	Other	Cyanide (free Cyanide)	NA
MW-119R	Plume fringe	605818.35	697431.29	Yearly	Other	Cyanide (free Cyanide)	NA
MW-121	Plume fringe	604122.35	697246.19	Yearly	Other	Cyanide (free Cyanide)	NA
MW-122	Plume fringe	604861.59	696909.61	Yearly	Other	Cyanide (free Cyanide)	NA
MW-123R	Plume fringe	605569.99	696961.11	Yearly	Other	Cyanide (free Cyanide)	NA
MW-124	Plume fringe	696272.7	696536.47	Yearly	Other	Cyanide (free Cyanide)	NA
MW-129	Plume fringe	608420.21	696766.99	Yearly	Other	Cyanide (free Cyanide)	NA
MW-130	Plume sampling point	607997.64	697054.13	Yearly	Other	Cyanide (free Cyanide)	NA
P-24	Plume fringe	609021.58	696585.34	Yearly	Other	Cyanide (free Cyanide)	NA
P-25A	Sentinel	607683.16	696039.98	Yearly	Other	Cyanide (free Cyanide)	NA
W-12R	Sentinel	608623.67	696285.36	Semi-annually	Other	Cyanide (free Cyanide)	NA
C-3	Sentinel	608236.24	696891.95	Yearly	Other	Cyanide (free Cyanide)	NA
W-17	Sentinel	605059.08	697476	Yearly	Other	Cyanide (free Cyanide)	NA
W-30R	Sentinel	608919.35	696214.59	Yearly	Other	Cyanide (free Cyanide)	NA
W-31	Sentinel	604428.77	697961.15	Yearly	Other	Cyanide (free Cyanide)	NA
MW-100	Plume fringe	606535.07	697355.45	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA

Ground Water Monitoring Plan for Ground Water**Remedial Action Permit** (version 1.0; May 17, 2012)**INSTRUCTIONS**

Case Name: NJD00244512
Program Interest (PI) ID #: G000001985
Spreadsheet Submission Date: 8/12/2013

RESET DATA**PRINT**

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
MW-101	Plume fringe	607065.84	697334.87	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-105	Plume sampling point	608620.21	696272.7	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-111	Plume fringe	606730.08	697368.36	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-115	Plume sampling point	607921.35	697150.99	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-125	Plume fringe	604621.17	697784.06	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-126R	Plume fringe	605130.3	697465.4	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-127	Plume fringe	604570.35	697211.29	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
MW-128R	Plume fringe	605777.35	697161.29	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
PZ-06	Plume fringe	607960.9	696679.05	Quarterly	Other	Depth to Water Table from Top of Inner Well Casing (ft)	NA
PZ-01	Plume fringe	608249.55	696352.6	Quarterly	Other	Free Product	NA
PZ-02	Plume sampling point	608257.64	696376.66	Quarterly	Other	Free Product	NA
PZ-03	Plume fringe	608263.32	696402.91	Quarterly	Other	Free Product	NA
PZ-04	Plume fringe	608271.88	696427.51	Quarterly	Other	Free Product	NA
PZ-07	Plume fringe	607875.46	696881.33	Quarterly	Other	Free Product	NA
P-20	Area of Concern	608531.89	697508.92	Quarterly	Other	Free Product	NA
P-22R	Area of Concern	609438.02	697526.64	Quarterly	Other	Free Product	NA
SWW-5.1R	Plume sampling point	609458.48	697038.8	Quarterly	Other	Free Product	NA
W-9	Area of Concern	608950.93	697571.13	Quarterly	Other	Free Product	NA

Ground Water Monitoring Plan for Ground Water**Remedial Action Permit** (version 1.0; May 17, 2012)**INSTRUCTIONS**

Case Name: NJD00244512
Program Interest (PI) ID #: G000001985
Spreadsheet Submission Date: 8/12/2013

RESET DATA**PRINT**

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
W-27	Area of Concern	607951.69	697394.26	Quarterly	Other	Free Product	NA
SWW-6.5	Sentinel	609521.8	697264.08	Quarterly	Other	Free Product	NA
SWW-7.5	Sentinel	609479.19	697434.54	Quarterly	Other	Free Product	NA
SWW-9	Sentinel	609277.16	697593.61	Quarterly	Other	Free Product	NA
W-25	Sentinel	608675.85	697513.56	Yearly	Other	Free Product	NA
W-29R (4)	Sentinel	609276.9	697276.9	Yearly	Other	Free Product	NA
GAC-ADS-01	Sentinel	608142.7	696430.92	Semi-annually	Other	Metals	NA
GAC-ADS-02	Sentinel	608225.79	696407.38	Semi-annually	Other	Metals	NA
GAC-ADS-03	Sentinel	608302.47	696386.33	Semi-annually	Other	Metals	NA
MW-102R	Sentinel	606740.19	696791.73	Semi-annually	Other	Metals	NA
MW-103	Sentinel	607689.16	696531.86	Semi-annually	Other	Metals	NA
MW-106R	Plume fringe	608967.76	696200.06	Semi-annually	Other	Metals	NA
MW-110R	Plume fringe	606235.35	697180.29	Yearly	Other	Metals	NA
MW-112	Plume fringe	607630.86	697259.36	Yearly	Other	Metals	NA
MW-113	Sentinel	608018.32	696097.97	Semi-annually	Other	Metals	NA
MW-116	Plume sampling point	608240.75	697077.61	Yearly	Other	Metals	NA
MW-117	Plume sampling point	608876.31	697054.51	Yearly	Other	Metals	NA
MW-118R	Plume sampling point	609448.65	697193.39	Yearly	Other	Metals	NA
MW-119R	Plume fringe	605818.35	697431.29	Yearly	Other	Metals	NA
MW-121	Plume fringe	604122.35	697246.19	Yearly	Other	Metals	NA
MW-122	Plume fringe	604861.59	696909.61	Yearly	Other	Metals	NA
MW-123R	Plume fringe	605569.99	696961.11	Yearly	Other	Metals	NA
MW-124	Plume fringe	696272.7	696536.47	Yearly	Other	Metals	NA
MW-129	Plume fringe	608420.21	696766.99	Yearly	Other	Metals	NA
MW-130	Plume sampling point	607997.64	697054.13	Yearly	Other	Metals	NA
P-24	Plume fringe	609021.58	696585.34	Yearly	Other	Metals	NA
P-25A	Sentinel	607683.16	696039.98	Yearly	Other	Metals	NA

Ground Water Monitoring Plan for Ground Water**Remedial Action Permit** (version 1.0; May 17, 2012)**INSTRUCTIONS**

Case Name: NJD00244512
Program Interest (PI) ID #: G000001985
Spreadsheet Submission Date: 8/12/2013

RESET DATA**PRINT**

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
W-12R	Sentinel	608623.67	696285.36	Semi-annually	Other	Metals	NA
C-3	Sentinel	608236.24	696891.95	Yearly	Other	Metals	NA
W-17	Sentinel	605059.08	697476	Yearly	Other	Metals	NA
W-30R	Sentinel	608919.35	696214.59	Yearly	Other	Metals	NA
W-31	Sentinel	604428.77	697961.15	Yearly	Other	Metals	NA
GAC-ADS-01	Sentinel	608142.7	696430.92	Semi-annually	Other	Volatile Organics	NA
GAC-ADS-02	Sentinel	608225.79	696407.38	Semi-annually	Other	Volatile Organics	NA
GAC-ADS-03	Sentinel	608302.47	696386.33	Semi-annually	Other	Volatile Organics	NA
MW-102R	Sentinel	606740.19	696791.73	Semi-annually	Other	Volatile Organics	NA
MW-103	Sentinel	607689.16	696531.86	Semi-annually	Other	Volatile Organics	NA
MW-106R	Plume fringe	608967.76	696200.06	Semi-annually	Other	Volatile Organics	NA
MW-110R	Plume fringe	606235.35	697180.29	Yearly	Other	Volatile Organics	NA
MW-112	Plume fringe	607630.86	697259.36	Yearly	Other	Volatile Organics	NA
MW-113	Sentinel	608018.32	696097.97	Semi-annually	Other	Volatile Organics	NA
MW-116	Plume sampling point	608240.75	697077.61	Yearly	Other	Volatile Organics	NA
MW-117	Plume sampling point	608876.31	697054.51	Yearly	Other	Volatile Organics	NA
MW-118R	Plume sampling point	609448.65	697193.39	Yearly	Other	Volatile Organics	NA
MW-119R	Plume fringe	605818.35	697431.29	Yearly	Other	Volatile Organics	NA
MW-121	Plume fringe	604122.35	697246.19	Yearly	Other	Volatile Organics	NA
MW-122	Plume fringe	604861.59	696909.61	Yearly	Other	Volatile Organics	NA
MW-123R	Plume fringe	605569.99	696961.11	Yearly	Other	Volatile Organics	NA
MW-124	Plume fringe	696272.7	696536.47	Yearly	Other	Volatile Organics	NA
MW-129	Plume fringe	608420.21	696766.99	Yearly	Other	Volatile Organics	NA
MW-130	Plume sampling point	607997.64	697054.13	Yearly	Other	Volatile Organics	NA
P-24	Plume fringe	609021.58	696585.34	Yearly	Other	Volatile Organics	NA
P-25A	Sentinel	607683.16	696039.98	Yearly	Other	Volatile Organics	NA
W-12R	Sentinel	608623.67	696285.36	Semi-annually	Other	Volatile Organics	NA

Remedial Action Permit (version 1.0; May 17, 2012)

PRINT

Case Name:	NJD00244512
Program Interest (PI) ID #:	G000001985
Spreadsheet Submission Date:	8/12/2013

Wells to Be Sampled	Type of Well	Easting	Northing	Sampling Schedule	Reporting Schedule	Parameters for Each Well	CASRN
C-3	Sentinel	608236.24	696891.95	Yearly	Other	Volatile Organics	NA
W-17	Sentinel	605059.08	697476	Yearly	Other	Volatile Organics	NA
W-30R	Sentinel	608919.35	696214.59	Yearly	Other	Volatile Organics	NA
W-31	Sentinel	604428.77	697961.15	Yearly	Other	Volatile Organics	NA

- | | | | | |
|----|--|--|--|--|
| 1) | All wells sampled for Free Product or other constituents are gauged for Depth to Water Table from Top of Inner Well casing (ft) prior to sampling. | | | |
| 2) | "Base Neutrals" is presumed to indicated semi-volatile organics. | | | |
| 3) | All wells sampled for Free Cyanide were also sampled for Total Cyanide. | | | |
| 4) | All shallow zone wells sampled for Volatile Organics (GAC-ADS-01, GAC-ADS02, GAC-ADS-03, MW-102R, MW-103, MW-106R, MW-110R, MW-112, MW-113, MW-116, MW-117, MW-118R, MW-119R, MW-121, MW-122, MW-123R, MW-124, MW-129, MW-130, P-24, P-25A, W-12R) were also sampled for site specific Natural Attenuation and Groundwater General Chemistry Parameters; pH, specific conductance, temperature, dissolved oxygen, ORP, alkalinity, nitrate, sulfate, chloride, manganese, ferrous iron, methane, and carbon dioxide. | | | |
| 5) | All deep zone wells sampled for Volatile Organics (C-3, SWW-6.5, SWW-7.5, SWW-9, W-17, W-25, W-29R, W-30R, W-31) were also sampled for site specific Natural Attenuation and Groundwater General Chemistry Parameters; pH, specific conductance, temperature, dissolved oxygen, ORP, Total Dissolved Solids, and chloride. | | | |

[illegible]

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT E
Fate and Transport
Description and Model Documentation**

KEY

**Fate and Transport
Description and Model
Documentation
Former Koppers Seaboard Site
Kearny, Hudson County, New Jersey**

A fate and transport three dimensional groundwater model projecting groundwater flow directions, horizontal gradients, and characteristics of the most mobile constituents at the site (e.g., benzene and naphthalene) was developed and submitted to NJDEP in April 1998 as Volume II-A (Addendum A) of the Remedial Action Work Plan (RAW). A copy of the same has been attached. Several cross-sections (Figures 3 through 10) through the site geologic formations were developed as part of the 1998 RAW. In an attempt to provide cross-sections for the CEA area, the 1998 RAW cross-sections (Exhibit C) along with a figure showing the known DNAPL limits (Exhibit B Attachment D) are provided. Additionally, figures showing the conceptual hydrogeologic model, benzene and naphthalene concentration distributions are included in the RAW Volume II-A fate and transport model documentation included in this exhibit.

The groundwater model projected potentiometric surfaces for 0.5 years, 2 years, 10 years, and 50 years after completion of construction activities (see attached figures). These projected potentiometric surfaces were qualitatively compared to potentiometric surfaces generated from gauging data from March 3, 2010, April 26, 2010, January 29, 2013, and July 16, 2013 (see attached figures). This comparison indicates that there continues to be a low gradient to stagnant zone in the eastern and central areas with relatively steeper gradients in the western area as predicted in the 2 and 10 year post construction projected models. A groundwater divide is present with overall decreasing magnitudes (lower horizontal gradient) versus time in the observed data near the portion of the central area that is adjacent to the slurry wall. This groundwater divide is consistent with the predicted transition in groundwater flow direction in this region of the site from the 2 year to the 10 year post construction groundwater model. The observed data indicates that groundwater gradients in the eastern area of the site remain relatively flat with southward gradients present outside the slurry wall, as predicted in the 2 and 10 year post construction groundwater model. In summary, the observed groundwater flow conditions remain generally consistent with the projected post construction groundwater model.

A review of the distribution and dynamic range of concentrations for indicator parameters benzene and naphthalene in groundwater was completed using analytical results from samples collected April 2010, October, 2012, and May 2013. This analysis was based on analytical data from 22 monitoring wells. The purpose of this review was to qualitatively compare the observed concentrations of indicator parameters to the concentrations predicted in the post construction groundwater model to determine consistency.

A review of the observed data indicates stable to decreasing concentrations of indicator parameters at 19 of the 22 wells reviewed. Exceptions include two monitoring well locations in the Central Area (MW-110R and MW-112) both of which appear to indicate increasing

concentrations of benzene and naphthalene in the shallow groundwater regime. Both monitoring wells MW-110R and MW-112 are considered “plume fringe” wells thus detections of both these constituents is not unexpected. Concentrations of benzene at these two locations are slightly above the NJ Class IIA GWQS (September 1998) of 1 ug/L and the 2011 saline surface water standard of 3.3 ug/L, with MW-110R having a concentration of 10 ug/L and MW-112 showing a concentration of 4.7 ug/L for May of 2013. It was observed that the monitoring wells situated downgradient from these two subject locations exhibit stable to decreasing concentrations of indicator parameters. These observations further support that the observed indicator parameter trends from these two monitoring wells is localized and most likely a short-term phenomenon which would be congruent with the observed and model predicted transition to lower horizontal hydraulic gradients for this area. As the indicator parameter component of the fate and transport groundwater model focused on the Eastern Area, the potentiometric surface data was used to determine consistency with observations from the Central Area. A review of the observed and predicted change in the potentiometric surface for the Central Area indicates a transition in groundwater flow directions where horizontal hydraulic gradients have decreased between March 2010 and July 2013. This change in hydraulic gradient may be responsible for short-term changes in indicator parameter concentrations at these locations in the Central Area. Therefore, the groundwater models predicted flow direction and gradient output remains consistent with the observed indicator parameter conditions for the Central Area.

Eastern Area monitoring well P-24 appears to indicate an increase in naphthalene concentrations (270 ug/l in April 2010 to 1,500 ug/l in May 2013) while benzene concentrations remain relatively stable. P-24 is considered a “plume fringe” well. The groundwater model predicts a minor expansion of the dissolved naphthalene extent in the Eastern Area in the vicinity of P-24 during its 50 year post construction projection. The groundwater model predicts minor expansion of the benzene plume up to 2 years after construction and then predicts benzene extent will stabilize. Therefore, the indicator parameter observations at P-24 are consistent with the predictions from the groundwater model.

CONFIDENTIAL

**REMEDIAL ACTION WORK PLAN
VOLUME II-A
SITE CHARACTERISTICS AND SUPPORTING DATA**

GROUNDWATER FLOW AND TRANSPORT MODELING

**FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY**

Prepared for:
**ECDC
140 Marsh Street
Port Newark, New Jersey 07114**

Prepared by:
**Key Environmental, Inc.
1200 Arch Street, Suite 200
Carnegie, Pennsylvania 15106**

and

**Groundwater Insight Limited
5 Parkhill Road
Halifax, Nova Scotia
Canada B3P 1R2**

April 1998

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A	Summary of Sensitivity Analysis for Final Barrier Wall Alignment

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT F
Monitoring Wells Information**

- F-1** Inspection Summary
- F-2** Abandonment Report

KEY



WELL INSPECTION REPORT

Project No.: OM-0542-13-091
Project Name: Seaboard-Annual/2nd Qtr 2013 GW
Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
W-17	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	slip/trip/fall	Yes	Yes	
W-30R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	ticks	Yes	Yes	
C-3	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	none	Yes	Yes	
P-25A	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	none	Yes	Yes	
MW-118R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	none	Yes	Yes	
MW-117	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	none	Yes	Yes	
PZ-01	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Overgrown	insects, slip/trip/fall	Yes	Yes	
W-31	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	slip/trip/fall	Yes	Yes	
W-12R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	insects	Yes	Yes	
MW-105	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Overgrown	insects	Yes	Yes	

Notes:
 N/A = not available
 ND = not determined
 NP = no Product

Print Date: 5/28/2013
 Print Time: 10:09:04AM



WELL INSPECTION REPORT

Project No.: OM-0542-13-091
Project Name: Seaboard-Annual/2nd Qtr 2013 GW
Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
VW-106R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	none	Yes	Yes	non
W-25	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
MW-100	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	SPIDERS	Yes	Yes	NON
MW-130	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-129	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-123R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-101	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Spalled	Clear	NONE	Yes	Yes	NONE
MW-122	4/29/13	Stick up	Yes	Not Applicable	Good	Yes	Yes - Not Secure on Arrival	Issue noted see comment	None Present	Clear	NONE	Yes	Yes	NO FIXED CAP. 6" JPLUG.
MW-102R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-103	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE



WELL INSPECTION REPORT

Project No.: OM-0542-13-091

Project Name: Seaboard-Annual/2nd Qtr 2013 GW

Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
VW-119R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Wet	Clear	NONE	Yes	Yes	NONE
W-29R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
VW-110R	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
MW-112	4/29/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
MW-113	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	WELL LOCATED OFFSITE IN LOCKED GATE.
CA-02-1/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-02-2/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-02-Effl	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-01-1/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-01-2/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-01-Effl	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	none	Yes	Yes	none
CA-03-1/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
CA-03-2/3	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE

Notes:

N/A = not available

ND = not determined

NP = no Product

Print Date: 5/28/2013

Print Time: 10:09:05AM



WELL INSPECTION REPORT

Project No.: OM-0542-13-091

Project Name: Seaboard-Annual/2nd Qtr 2013 GW

Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
CA-03-Effl	4/30/13	Other	Yes	Not Applicable	Good	Yes	Not Applicable	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-121	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Not Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
MW-111	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
SWW-5.1P	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-116	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
P-24	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
P-22R	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-126R	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-125	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-128R	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE

Notes:

N/A = not available
 ND = not determined
 NP = no Product

Print Date: 5/28/2013
 Print Time: 10:09:05AM



WELL INSPECTION REPORT

Project No.: OM-0542-13-091

Project Name: Seaboard-Annual/2nd Qtr 2013 GW

Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
MW-127	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
SWW-6.5	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
SWW-7.5	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
SWW-9	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Requires Attention	Clear	NONE	Yes	Yes	NONE
PZ-06	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
PZ-07	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
PZ-04	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
W-27	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-124	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
W-9	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE

Notes:

N/A = not available
 ND = not determined
 NP = no Product

Print Date: 5/28/2013
 Print Time: 10:09:05AM



WELL INSPECTION REPORT

Project No.: OM-0542-13-091
Project Name: Seaboard-Annual/2nd Qtr 2013 GW
Location: Seaboard

Well	Date	Well Type	Well Outer Casing			Well Inner Casing			Well Pad Condition	Vegetation/ Accessibility	Potential Hazard	Well Head Locked & Secure @ Departure	Photo	Notes
			Label	Lock	Condition	Survey Mark Present	Cap	Condition						
P-20	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	None Present	Clear	NONE	Yes	Yes	NONE
MW-115	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	NONE
PZ-02	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	SPIDERS	Yes	Yes	NONE
PZ-03	4/30/13	Stick up	Yes	Yes - Secure on Arrival	Good	Yes	Yes - Secure on Arrival	Good	Good	Clear	NONE	Yes	Yes	VERY VISCOUS DNAPL

WELL ABANDONMENT REPORT

P800804224/

MAIL TO: Bureau of Water Systems & Well Permitting
PO Box 426
Trenton, NJ 08625-0426

WELL PERMIT # 26-51250
of well sealed

DATE WELL SEALED 10/27/2010

PROPERTY OWNER Hudson County Improvement Auth.

ADDRESS 2 Journal Square, Jersey City, NJ 07306

WELL LOCATION 1 Fish House Road Former Koppers Seaboard, Kearny Town, Hudson County
Street & No., Township, County

MW126 55, 56, 60 287
Well No. Lot No. Block No.

USE OF WELL PRIOR TO ABANDONMENT: Monitoring

REASON FOR ABANDONMENT: Damaged

WAS A NEW WELL DRILLED? ☒ YES ☐ NO PERMIT # OF NEW WELL MW-126R

TOTAL DEPTH OF WELL 11.3
DIAMETER 2"
CASING LENGTH 6.3
SCREEN LENGTH 5'
NUMBER OF CASINGS 1

MATERIAL USED TO DECOMMISSION WELL:

8 Gallons of Water
94 Lbs. of Cement
5 Lbs. of Bentonite
0 Lbs. of Sand/Gravel
(none if well is contaminated)

FORMATION: ☐ Consolidated
☒ Unconsolidated

<p>Cross-section of sealed well</p> <p><u>Grade</u></p> <p><u>7'</u></p> <p><u>Grout Filled</u></p>	<p>Draw a sketch showing distance and relations of well site to nearest roads, buildings, etc.</p> <p>AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM) NJ STATE PLACE COORDINATE IN US SURVEY FEET</p> <p>NORTHING: _____ EASTING: _____ OR LATITUDE: _____ LONGITUDE: _____</p>
---	--

To permit adequate grouting, the casing should remain in place, but ungrouted liner pipes or any other obstructions must be removed. Pressure grouting is the only accepted method.

WAS CASING LEFT IN PLACE? ☒ YES ☐ NO CASING MATERIAL: PVC

WERE OTHER OBSTRUCTIONS LEFT IN WELL? ☐ YES ☒ NO WHAT WERE THE OBSTRUCTIONS: _____

IF "YES", AUTHORIZATION GRANTED BY _____ ON _____
(NJDEP Official) (Date)

Was an alternative decommissioning method used and/or approval to decommission granted by a DEP official? ☐ YES ☒ NO

IF "YES", authorization granted by _____ ON _____
(NJDEP Official) (Date)

I certify that this well was sealed in accordance with N.J.A.C. 7:9D-3 et seq.
Wellington Reeve 1256 North Church St. Morristown, NJ 08057 11-5-10
Performing Work (Print or Type) Address Mailing Date
Name of NJ Licensed Well Driller Wellington Reeve J1455
Signature of NJ Licensed Well Driller Performing Work Registration #

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT G
Well Search Results**

KEY

Exhibit G

Well Search Results

A well search was completed via review of the NJDEP's online database accessible through i-MapNJ which is available via the following URL:

http://njgin.state.nj.us/dep/DEP_iMapNJDEP/viewer.htm

No wells or Tier 1, 2, or 3 community or non-community wellhead protection areas could be identified within a one-mile radius of the site. In addition, the NJDEP's Data Miner available at the following URL was used to identify wells and borings located in a 1-mile square surrounding the site:

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/categories?category=WS+Well+Permits

The approximate center of the site is located at the following coordinates (NJ State Plane NAD 1983):

X = 606,046 ft

Y = 697,238 ft

The data miner coordinate-based search engine was used to identify wells and borings. Coordinate ranges were specified as the site center coordinate plus or minus ½ mile (i.e., 5,280/2 ft) as follows:

X Range: From: 603,406 ft **To:** 608,686 ft

Y Range: From: 694,598 ft **To:** 699,878 ft

The Data Miner coordinate-based search engine was used to identify wells and borings within a 1-mile radius.

Three (3) “potentially potable” wells other than monitoring wells, recovery wells for site remediation, piezometers, etc. were identified within a 1-mile radius surrounding the site. The findings of the well search are summarized in the attached Data Output table obtained from NJDEP's Well Permit Data Miner.

In accordance with N.J.A.C. 7:26E 1.14, the three “potentially potable” wells listed as either industrial or domestic were plotted on a 0.5-mile radius site map (attached Figure G-1). Two of the wells were located outside the 0.5 mile radius and one well was located within the 0.5 miles radius. As shown on the figure, the well located within 0.5 mile radius is located on the eastern side of the Hackensack River.

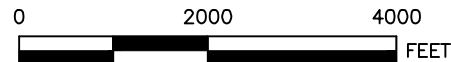
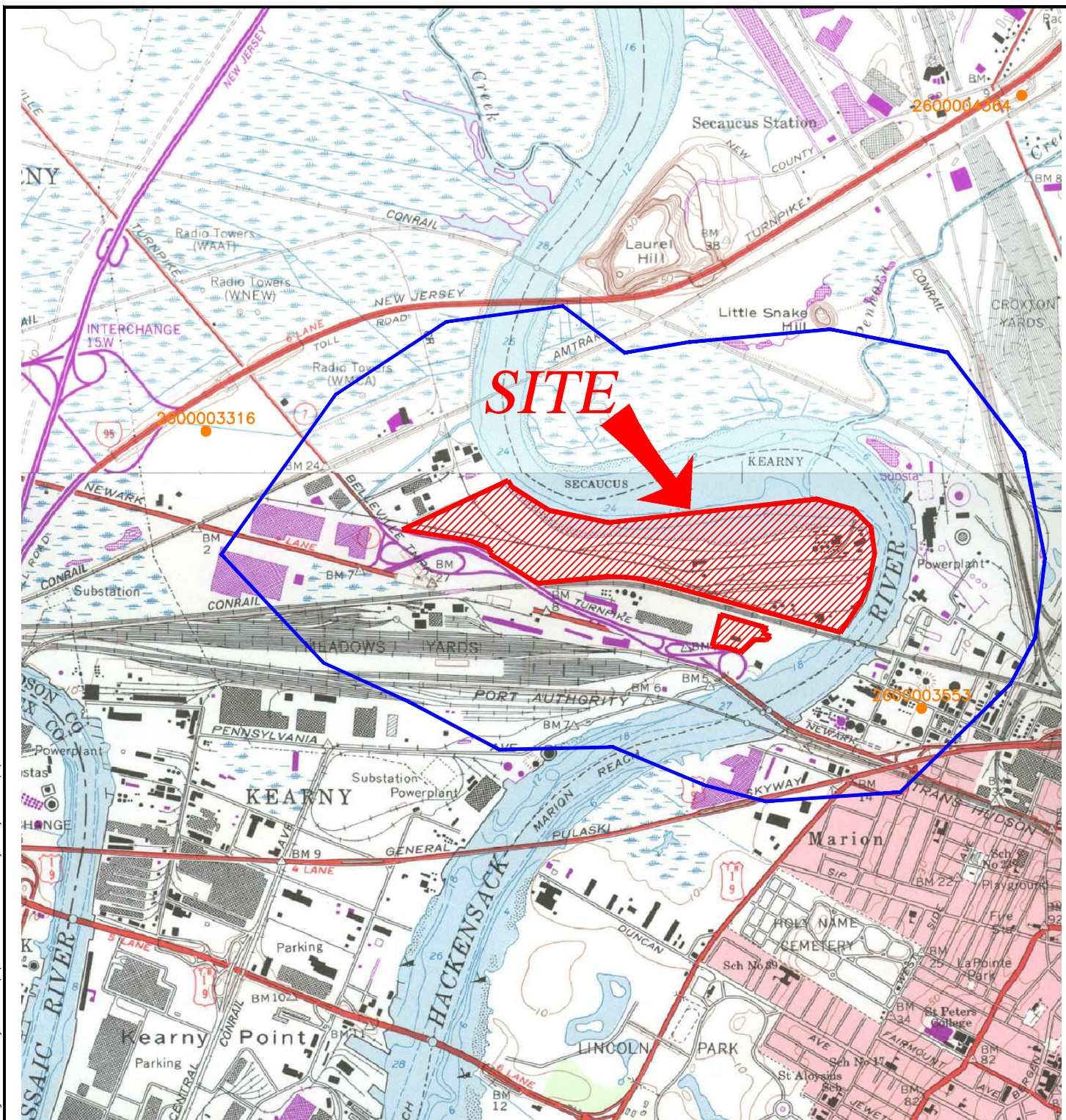
A well search request was submitted to the Bureau of Water Systems and Well Permitting to determine the status of each potentially potable well identified in the search results. An electronic copy of the well search has been provided to the NJDEP's Site Remediation Program Geographic Information System at the following e-mail address: srpgis@dep.state.nj.us.

Table 2
Potentially Potable Well Search Results
Former Koppers Seaboard Site
Kearny, New Jersey

Download Document	Permit Number	Well Use	Potentially Potable	Document	Date (permitted/drilled /sealed)	Physical Address	County	Municipality
	2600003553	Industrial	Yes	Permit	10/18/1965		Hudson	Jersey City
	2600003316	Domestic	Yes	Permit	7/20/1965		Hudson	Kearny Town
	2600004364	Industrial	Yes	Record	4/10/1973	COUNTY ROAD 653	Hudson	Secaucus Town

Block	Lot	Location Method	Easting (X)	Northing (Y)	Distance (feet)	Depth (ft)	Capacity (gal/min)
		Prop Loc - Hard Copy	610309	695004		80	300
		Prop Loc - Hard Copy	599977	699003		100	5
		Prop Loc - Dig Image	611754	703848	8733	150	0

y:\seaboard\08-637\jdep-ccc-wr\seaboard (cad 2012 only)\Figure g-1.dwg Last Saved By: Scorer 8/9/2013 9:04 AM Plotted By: Shelly Comer 8/9/2013 9:04 AM Scale: 1:1,0168



LEGEND



POTABLE WELL LOCATION
(COORDINATES BASED ON
WELL SEARCH)



0.5 MILE RADIUS



NEW JERSEY



QUADRANGLE LOCATION

REFERENCES: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES OF JERSEY CITY,
AND WEEHAWKEN, NJ-NY.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 08/09/13
CHKD: VMV	DATE: 08/09/13
APPD: PWS	DATE: 08/09/13
SCALE:	AS SHOWN

KEY ENVIRONMENTAL
INCORPORATED

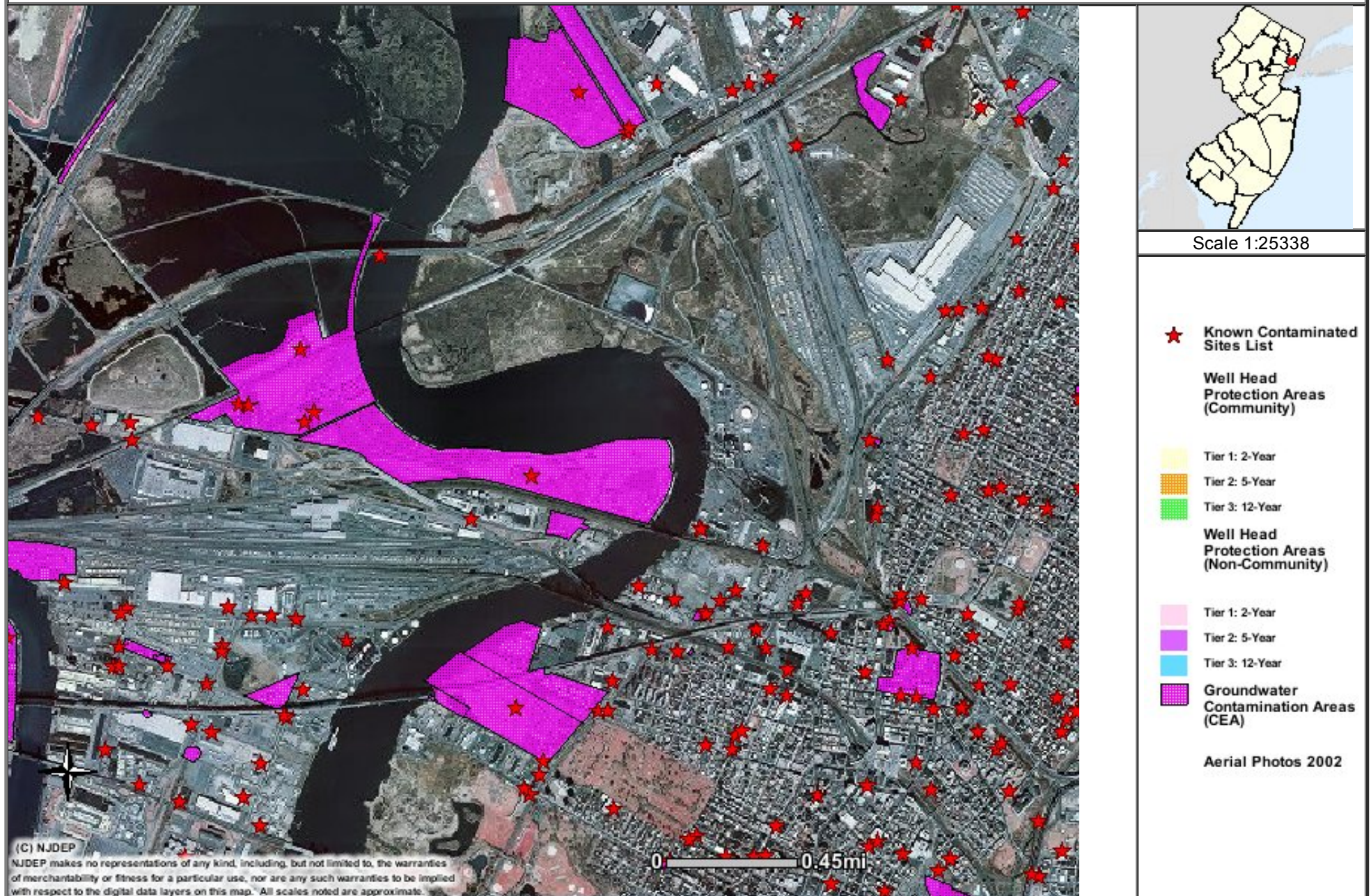
FORMER KOPPERS SEABOARD SITE
KEARNY, NEW JERSEY

HALF MILE RADIUS MAP

PROJECT NO: 07-487

FIGURE G-1

Known Sites, Wellhead Protection Area, and Groundwater Contamination Areas - Seaboard Site Vicinity



CORRESPONDENCE LOG



KEY Project: Former Koppers Seaboard Site

Job#: 08637

Date: 8/06/2013

Page _____ OF _____

KEY Staff Member:

Kathleen Brosseau, Staff Geologist

Contact Name/Phone Number/Email:

John Sarnas, Health Officer / 201-997-0600
Paula Cavalier, Kearny Water Department / 201-955-7406
Carol Ann Wilson / 201-369-5280
Joe Vuich, Town of Kearny Engineer / 201-939-8805
Michael J. Martello Phone / 201-955-7882
Massiel Ferrara, PP, AICP, Planning Director Hudson County
(mferrara@hcnj.us) / 201-217-5137

Telephone/Email Correspondance Log (Date/Time/Contact Info/Discussion Notes):

8/2/2013

E-mailed John Sarnas, Kearny Health Officer, to confirm water use plans. Sarnas responded by email. Mr. Sarnas responded by email on 8/05/2013.

8/2/2013, 3:17 pm

Talked to Russ who confirmed there were no potable wells in Kearny, no plans to develop any, and directed me to Paula Cavalier (pcavalier@kearnynj.org) for a letter stated as such.

8/2/2013, 3:37 pm

Called Carol Ann Wilson, Department of Health and Human Services for Hudson County; directed to call back Monday and ask for Jerard Rizzo

8/2/2013

Joe Vuich, Town of Kearny Engineer, confirmed no potable water wells in Kearny or any plans for water wells in the next 25 years; will be emailing a confirmation (jvuich@negliaengineering.com)

8/5/2013

E-mailed Michael Martello, Kearny Construction & Zoning Official, (tchisari@kearnynj.org)

Contacted Massiel Ferrara, PP, AICP, Planning Director Hudson County (mferrara@hcnj.us)

Meeting(s) scheduled:

Kathleen Brosseau

From: Sarnas,John <jsarnas@kearnynj.org>
Sent: Monday, August 05, 2013 8:42 AM
To: Kathleen Brosseau
Subject: RE: Water use in Kearny

That is correct

From: Kathleen Brosseau [<mailto:kbrosseau@keyenvir.com>]
Sent: Friday, August 02, 2013 3:35 PM
To: Sarnas,John
Subject: Water use in Kearny

Hello Mr. Sarnas,

I'm working on renewing a CEA for 1 Fishhouse Rd., Kearny and just need to confirm that there are no potable wells in Kearny or plans to develop potable wells in Kearny for the 25-year planning horizon. I believe you spoke with my associate Jamak Koochack in 2011; I'm just confirming that this is still the situation. Please let me know if you have any questions and if this is correct.

Thank you,

Kathleen

Kathleen Brosseau, MS, GIT

Staff Geologist
Key Environmental, Inc.
120 Exchange Street
Suite 300
Portland, ME 04101
Office: 207.772.8100 Ext. 104
Fax: 207.772.8101
Cell: 412.759.4076



Please consider the environment before printing this email

Kathleen Brosseau

From: Cavalier, Paula <Pcavalier@kearnynj.org>
Sent: Monday, August 05, 2013 11:55 AM
To: Kathleen Brosseau
Subject: RE: potable water in Kearny

I will mail you a letter regarding this matter. Should I mail it to the 120 Exchange street address?

*Paula Cavalier
Kearny Water Department
Town of Kearny
201-955-7406 fax: 201-991-0723*

2013 Holiday Closings: January 1, 21, February 12 & 18, March 29, May 27, July 4,5, August 23, September 2, October 14, November 5, 11, 28 & 29, December 25.

This memorandum contains advisory, contemplative, and deliberative material and is intended only for the person(s) named as recipient(s). This e-mail and any attachments are confidential and may be privileged or attorney/client privileged. If you are not the intended recipient, you must not review, transmit, convert to hard copy, copy, use, disclose, distribute or take any action on reliance upon this e-mail or any attachment. If you have received this e-mail in error, please immediately notify us by return e-mail or by fax at (201) 991-0723 and delete this e-mail from your system. Any reviews or opinions presented in this e-mail are solely those of the author and do not necessarily represent those of the Town of Kearny.

From: Kathleen Brosseau [<mailto:kbrosseau@keyenvir.com>]
Sent: Friday, August 02, 2013 3:27 PM
To: Cavalier, Paula
Subject: potable water in Kearny

Hello P. Cavalier!

I just spoke with Russ at the Kearny Water Department, and he assured me there were no potable wells in Kearny. I'm renewing a CEA and was hoping I could get a letter confirming that there aren't any wells and no plans to allow wells in the next 25 years- the letter we were provided with in 2011 saying such is attached, we just need to confirm that this is still true.

Please let me know if you have any questions, and thank you!

Kathleen Brosseau, MS, GIT

Staff Geologist
Key Environmental, Inc.
120 Exchange Street
Suite 300
Portland, ME 04101
Office: 207.772.8100 Ext. 104
Fax: 207.772.8101
Cell: 412.759.4076



Please consider the environment before printing this email



Town of Kearny Water Department
MANAGING THE TOWN WATER SUPPLY

570 Elm Street
Kearny, NJ 07032
Tel: (201) 955-7406
Fax: (201) 991-0723

August 6, 2013

Key Environmental Inc
ATT: Kathleen Brosseau
120 Exchange Street
Suite 300
Portland, ME 04101

RE: Request for Water Supply Information
Groundwater Classification Exception Area (CEA)
1 Fish House Road, Kearny, NJ 07032
Site: Seaboard

Dear Kathleen:

The town of Kearny is a municipal partner in the North Jersey District Water Supply Commission's North and South Projects. We are classified as a bulk purchase surface water system. Our NJDEP Public Community Water System Identification Number is 0907001. The town's potable water distribution system is municipally owned and operated. As a NJDWSC municipal partner, the town has ownership rights to 13 million gallons per day (MGD) of finished potable water, and currently consumes six and one half (6½) MGD.

There are currently zero Public Community potable water wells in the town of Kearny. There are zero privately-owned potable water wells on record in the town. The future establishment of a well is not part of any plan within the town of Kearny. The town will follow all federal and state regulations concerning the installation of potable wells within its boundaries. There is currently no existing ordinance restricting the installation of potable wells within the town.

There is no plan to change the water supply plan to this area. You may call me at the Kearny Water Department (201) 955-7406, or contact me at rferraioli@kearnynj.org with any questions you might have. Thank you.

Yours truly,

A handwritten signature in black ink, appearing to read "Rich Ferraioli".

Richard Ferraioli
Town of Kearny Water Superintendent

Kathleen Brosseau

From: Joseph Vuich <jvuich@negliaengineering.com>
Sent: Monday, August 05, 2013 12:11 PM
To: Kathleen Brosseau
Cc: Jaeson Pieretti
Subject: RE: Kearny water use
Attachments: RE: gw use in kearny

Kathleen,

Please see attached for a copy of my correspondence with Jaeson about 2 months back also regarding a CEA renewal.

Our statement that we do not have any plans for the future reclamation of groundwater as a potable source still stands at this time.

Thanks,
Joe Vuich

From: Kathleen Brosseau [<mailto:kbrosseau@keyenvir.com>]
Sent: Monday, August 05, 2013 11:55 AM
To: Joseph Vuich
Subject: Kearny water use

Hello Joe,

Thank you for discussing the potable water use plans for Kearny on the phone with me earlier today. As I mentioned, I'm working on renewing a CEA for 1 Fishhouse Rd., Kearny and just need to confirm that there are no potable wells in Kearny or plans to develop potable wells in Kearny for the 25-year planning horizon. As the Town of Kearny Engineer I appreciate you confirming that this is still the situation.

Please let me know if you have any questions and if this is correct.

Thank you,

Kathleen Brosseau

Kathleen Brosseau, MS, GIT

Staff Geologist
Key Environmental, Inc.
120 Exchange Street
Suite 300
Portland, ME 04101
Office: 207.772.8100 Ext. 104
Fax: 207.772.8101
Cell: 412.759.4076



Please consider the environment before printing this email

From: Joseph Vuich <jvuich@negliaengineering.com>
Sent: Friday, June 14, 2013 1:32 PM
To: Jaeson Pieretti
Subject: RE: gw use in kearny

Jaeson,

I do not believe we have any plans for the future use of groundwater in any form.

Thanks,
Joe Vuich

From: Jaeson Pieretti [<mailto:jpieretti@keyenvir.com>]
Sent: Friday, June 14, 2013 1:27 PM
To: Joseph Vuich
Subject: gw use in kearny

Mr. Vuich,

NJDEP regulations for establishing a Classification Exception Area include inquiring about any plans the Town might have regarding groundwater use within the 25-year planning horizon. Please indicate how groundwater is currently used, if at all, in Kearny township and if there are any future planned uses. For your information, this CEA pertains to a site located at 1015 Belleville Turnpike, Kearny.

Thanks for your time, please contact me with any questions.

Jaeson Pieretti
Key Environmental, Inc.
575 Rt. 28, ste 208
Raritan, NJ 08869
732-343-3459

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)**

and

**REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

EXHIBIT H

Entities Notified

KEY

Via Certified Mail, Return Receipt Requested.

August 12, 2013

**RE: Notification of New Jersey Department of Environmental Protection (NJDEP)
Classification Exception Area/Well Restriction Area (CEA/WRA) Fact Sheet
for the Koppers Seaboard Site, Town of Kearny, Hudson County
Block 287, Lots 32.01, 54, 55, 56, 60, 61.02, 61.03, 62, 62.01,
63, 70, 70.1, 71, 71.01, 73 & 80**

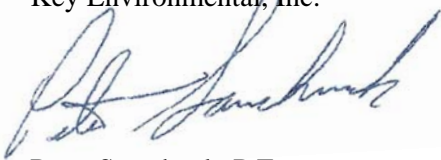
To Whom It May Concern:

On behalf of Beazer East, Inc. (Beazer), this letter serves as notice that a CEA/WRA Permit Fact Sheet is being submitted to the NJDEP in order to revise an existing groundwater classification exception area for the subject Site. The CEA / WRA is revised due to land use disturbances conducted since the issuance of the original CEA/WRA. The CEA/WRS is required because there is groundwater pollution in a localized area caused by a past discharge at the Site, and due to background conditions. The Site is currently undergoing remediation in accordance with an NJDEP-approved Remedial Action Workplan. The NJDEP will establish a CEA/WRA as part of a remedial action for groundwater when groundwater does not meet groundwater standards pursuant to N.J.A.C.7:9-6. This Notice is being provided in accordance with N.J.A.C.7:26C-7.3(d).

Attached hereto are copies of the CEA/WRA Permit Fact Sheet forms and Site Location Maps.

Please contact me with any questions.

Sincerely,
Key Environmental, Inc.



Peter Sawchuck, P.E.
Project Manager

Exhibit H

Entities Notified pursuant to N.J.A.C.7:26C-7.3(d)

A copy of the factsheet forms (except where noted otherwise), site location map and a notification cover letter were sent via certified mail with return receipt requested to the following entities:

Department / Owner Name/Tenant	Attention	Address	Date Notified
Town of Kearny Municipal Clerk	Patricia Carpenter	410 Kearny Ave Kearny, NJ 07032	8/12/13
Hudson County Clerk's Office	Barbara A. Netchert	254 Cornelison Ave-4th FL Jersey City, NJ 07302	8/12/13
Kearny Health Department	John P. Sarnas	645 Kearny Ave Kearny, NJ 07032	8/12/13
Hudson County Dept. of Health & Human Services	Carol Ann Wilson	Meadowview Campus 595 County Avenue Secaucus, NJ 07094	8/12/13
Hudson Regional Health Commission	County Environmental Health Act Agency	595 County Avenue, Bldg 1 Secaucus, NJ 07094	8/12/13
Hudson County Planning Board	Massiel Ferrara	Meadowview Campus 595 County Ave, Bldg 1 Secaucus, NJ 07094	8/12/13
Hudson County Improvement Authority	Norman Guerra	574 Summit Ave-5th Floor Jersey City, NJ 07306	8/12/13
NJDEP Bureau of Safe Drinking Water (Sent Letter only)	Sandra Krietzman	401 East State Street P.O. Box 420 Trenton, NJ 08625-0420	8/12/13
NJDEP Bureau of Water Systems & Well Permitting of Water Allocation (Sent Letter only)	Pat Bono	401-03 Bureau of Water Systems & Well Permitting 401 East State Street P.O. Box 420 Trenton, NJ 08625	8/12/13
Great Lakes Dock & Dredge Company	Steven F. O'Hara	Great Lakes Dock & Dredge Company (GLDD) 2122 York Road Oak Brook, IL 60523	8/12/13

7011 1150 0001 4250 2758

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Total Postage & Fees	\$ 6.77
Sent To	Pat Bono
Street, Apt. or PO Box	Bureau of Water Systems & Well Permitting of Water Allocation
City, State	NJDEP
	401 East State Street
	P.O. Box 420
	Trenton, NJ 08625-0420
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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Steven F. O'Hara
Street, Apt. or PO Box	Great Lakes Dock & Dredge Company
City, State	2122 York Road
	Oak Brook, IL 60523
PS Form	

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	County Environmental Health Act Agency
Street, Apt. or PO Box	Hudson Regional Health Commission
City, State	595 County Avenue, Bldg. 1
	Secaucus, NJ 07094
PS Form	

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Barbara A. Netchert
Street, Apt. or PO Box	Hudson County Clerk's Office
City, State	254 Cornelison Avenue, 4 th Floor
	Jersey City, NJ 07302
PS Form	

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Norman Guerra
Street, Apt. or PO Box	Hudson County Improvement Authority
City, State	574 Summit Avenue, 5 th Floor
	Jersey City, NJ 07306
PS Form	

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Massiel Ferrara
Street, Apt. or PO Box	Hudson County Planning Board
City, State	Meadowview Campus
	595 County Avenue, Bldg. 1
	Secaucus, NJ 07094
PS Form	

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Ms. Patricia Carpenter
Street, Apt. or PO Box	Town of Kearny Municipal Clerk
City, State	410 Kearny Avenue
	Kearny, NJ 07302
PS Form	

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.77
Sent To	Sandra Krietzman
Street, Apt. or PO Box	Bureau of Safe Drinking Water
City, State	NJDEP
	401 East State Street
	P.O. Box 420
	Trenton, NJ 08625-0420
PS Form	

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	John P. Sarnas
Street, Apt. or PO Box	Kearny Health Department
City, State	645 Kearny Avenue
	Kearny, NJ 07032
PS Form	

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17
Sent To	Carol Ann Wilson
Street, Apt. or PO Box	Hudson County Dpt. of Health and Human Services
City, State	Meadowview Campus
	595 County Avenue
	Secaucus, NJ 07094
PS Form	

**NJDEP
Site Remediation Program**

**CLASSIFICATION EXCEPTION AREA /
WELL RESTRICTION AREA (CEA / WRA)
and
REMEDIAL ACTION PROTECTIVENESS /
BIENNIAL CERTIFICATION FORM – GROUND WATER**

**FORMER KOPPERS SEABOARD SITE
KEARNY, HUDSON COUNTY, NEW JERSEY**

CASE ID: NJD00244512 / PROGRAM INTEREST (PI) NUMBER: G000001985

**EXHIBIT I
Case Inventory Document**

KEY

DRAFT - FORMER KOPPERS CO INC, SEABOARD SITE (PI NO:G000001985)CASE INVENTORY DOCUMENT

Area(s) of Concern, Receptor and Emergency Response Tracking	Impacted Media	Contaminants of Concern	Exposure Route	Receptors		
				Existing	Potential	
Unconsolidated Fill Zone (shallow) Groundwater	Groundwater	VOC's, SVOC's, Metals, Cyanide	Direct Contact, Groundwater	Hackensack River	Hackensack River	Phase I Investigation (ERT - August 1986) identified constituents (VOC's, SVOC's CN, metals) in surficial fill groundwater. Phase II RI (Keystone-June 1998). Plan for containment (slurry and steel sheetpile wall) and natural attenuation of dissolved phase contamination developed (KEY - RAWP May 1998) and implemented in 1999 by Safety Kleen (KEY - 2003 RARPR). Periodic groundwater monitoring/reporting conducted since 1999 (KEY Quarterly submissions). Modification of monitoring plan in 2007 (KEY- August 2007 RAWPA). Plan modifications performed in 2008. Addition of natural attenuation enhancement (Funnel and Gate and slurry wall extension) developed at NJDEP's request, (KEY-RAWPA August 2007) and implemented as documented in Remedial Action Progress Report (KEY - RAPR, August 2011). CEA issued by NJDEP (August 2011).
Former Production Wells	NA	NA	Groundwater			Workplan to locate former production wells (ITEX - May 1997) implemented. Two wells abandoned (PW01 and PW02). Following detailed investigations, two wells considered lost (PW03 and PW04) by NJDEP (NJDEP-12/1997). Deep bedrock well installed and sampled in PW area (June 1999) and no further action determined. Documentation provided (KEY-RARPR, October 2003)
Site wide surface soils	Soils	VOC's, SVOC's, Metals, Cyanide	Overland Flow, Direct contact, Groundwater, Surface Water	Hackensack River, Future On-Site Workers	Hackensack River, Future On-Site Workers	Phase I Investigation (ERT - August 1986) identified contamination (VOC's, SVOC's CN, metals) in surficial fill soils. Phase II Conducted (Keystone June 1988). Additional investigations in 1990 and 1997. Plan for installation of processed dredged material (PDM) surface cover (KEY - RAWP May 1998). Plan partially implemented (KEY- RARPR October 2003). Revisions to grading plans, permeability requirements and draft Deed Notice (KEY - RAWPA August 2008). Subgrade portion of surface cover plan implemented (KEY- RAPR August 2011).
Dense Non Aqueous Phase Liquids	Groundwater	VOC's, SVOC's	Groundwater, Direct Contact	Hackensack River	Hackensack River, Future On-Site Workers	Phase I Investigation (ERT August 1986) identified DNAPL in former coal tar plant area. Phase II RI conducted (Keystone - June 1988). Additional investigations and plans/permits (Keystone 1990 to 1991) for pilot interim remedial measures (IRM) system to remove DNAPL developed. Pilot IRM initiated in 1992. NJDEP issues NJPDES permit with monitoring and reporting requirements for IRM. IRM modifications for IRM approved by NJDEP and implemented by Beazer in 1994. NJPDES renewed by NJDEP in 1998. System has been upgraded and continues to operate on a continuous basis. 2007 NJDEP approved plan for expansion (KEY - RAWPA August 2007). System expansion completed and operational (KEY - RAPR August 2011). Periodic NJPDES reports issued.
Former -1 Million Gallon Above Ground Tank	Contents	Naphthalene, Coal Tar	Overland Flow			Phase I Investigation (ERT August 1986) identifies 1,000,000 gallon former storage tank containing coal tar distillates. RAWP for Tank (KEY 1996) updated in 1998 (KEY- RAWP May 1998). Off-site disposal and demolition implemented in 1999 and documentation provided (KEY - RARPR October 2003).

DRAFT - FORMER KOPPERS CO INC, SEABOARD SITE (PI NO:G000001985)CASE INVENTORY DOCUMENT

Area(s) of Concern, Receptor and Emergency Response Tracking	Impacted Media	Contaminants of Concern	Exposure Route	Receptors		
				Existing	Potential	
Dike Materials	Fill/Debris	SVOC, Dioxins/furans, metals	Surface Water, direct contact	Hackensack River	Hackensack River and Future On-Site Workers.	Phase I Investigation (ERT-August 1986) identifies and characterizes structure. Phase II RI conducted (Keystone - June 1988). Additional characterization performed (Keystone - RASSP 1990). Plan to remediate dike (excavation and on site consolidation) included in 1998 RAWP and RAWPA August 2007. Additional characterization performed (KEY- June 2008). Remediation completed in 2009-2010 and documented in RAPR August 2011.
Sediments	Hackensack River Shoreline fill/sediments	SVOC, Dioxins/furans, metals	Surface Water	Hackensack River	Hackensack River, Future On-Site Workers	Investigation (Keystone - June 1988). Additional characterization performed in 1990 (Keystone - RASSP). Plan to remediate sediments (excavation and on site consolidation) included in 1998 RAWP and RAWPA August 2007. Additional characterization performed (KEY- June 2008). Remediation completed in 2009-2010 and documented in RAPR August 2011.
Western Area Waste Piles	Fill	SVOC's VOC's metals, Dioxins/Furans, metals	Overland Flow, Direct contact	Hackensack River	Future On-site workers	Phase I Investigation (ERT-August 1986) conducted. Phase II RI conducted (Keystone - June 1988). Additional characterization performed in 1990 (Keystone - RASSP). Plan to remediate waste piles (solidify and/or consolidation and surface cover) included in 1998 RAWP and RAWPA August 2007. Work performed in 2008/2009 and documented in RAPR August 2011.
Western Area Chromium Deposits	Fill	Chromium	Surface water, direct contact	Hackensack River	Future On-Site Workers	ERT - August 1986 identified chromium fill area in western area of Site. Additional delineation performed per 1998 RAWP. Per 1998 RAWP and 2007 RAWPA plan to consolidate/solidify areas. Additional characterization performed and amended remediation approach to capillary break installation (Western Area additional Chromium Delineation and RAWPA Supplement KEY- October 2008). Remediation performed (Capillary break) and documented (KEY - RAPR August 2011).
Eastern Area Chromium Deposits	Fill	Chromium	Surface water, direct contact	Hackensack River	Future On-Site Workers	Delineation performed per 1998 RAWP. Per 1998 RAWP and 2007 RAWPA included plan to consolidate/solidify areas. Additional characterization performed and amended remediation approach to capillary break installation (Eastern Area additional Chromium Delineation and RAWPA Supplement KEY- July 2008). Remediation performed (Capillary break) and documented (KEY - RAPR August 2011)
Central Area Waste Piles	Fill	CN, SVOC's, metals	Surface Water, direct contact	Hackensack River	Future On-Site Workers	ERT - August 1986 identified waste piles in central area of Site. Phase II RI conducted (June - 1988). Central area waste piles removed and disposed off-site and gravel surface cover installed. NJDEP accepts remediation as complete in 1990.
Glacial Till	NA	None	Groundwater			Phase I and Phase II RI conducted (ERT - 1986 and Keystone - June 1988). Per May 1997 letter work plan (ITEX) additional investigation of glacial till groundwater conducted. Glacial till groundwater monitoring plan included in 1998 RAWP and 2007 RAWPA. Monitoring and quarterly reporting ongoing.